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| IDENTIFIERS | Vocational Education Curriculum Specialists |

ABSTRACT

Part of an eight-module, graduate level, competency-based curriculum to prepare specialists in vocational education curriculum, this module provides information and experiences to enable the curriculum specialist to coordinate evaluation in the development and implementation of vocational curriculums. The module is divided into two parts. Part 1 presents basic concepts and background knowledge of the evaluation process, including such topics as evaluation terminology, relationship of evaluation to the learning process, various evaluation models, criteria and design, and evaluation instruments. Part 2 is devoted to carrying out the evaluation process and field experience, involving the following activities: Assembling, analyzing, interpreting, and presenting evaluation data, evaluating program proposals and curriculum guides, and developing a program evaluation in an actual school setting. Organization of the module is by major performance objectives followed by related learning activities. A pretest, posttest, and glossary of terms complete the module. (NJ)

CURRICULUM

for

GRADUATE PROGRAM

to Prepare

VOCATIONAL EDUCATION CURRICULUM SPECIALISTS


# Preparing for Curriculum Evaluation



by the

Department of Education

Washington State University

Pullman, Washington 99163

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for the Curriculum Development Branch

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under Part I - Curriculum Development in Vocational and Technical Education

Vocational Education Amendments of 1968, Public Law 90-576

The content of this module was used as a part of a graduate course in Vocational Technical Education at Washington State University. The effectiveness of the curriculum material was evaluated on the basis of:

1. Performance data from pre and post tests and other evaluative techniques used in the course.
2. Use of a Curriculum Evaluation Questionnaire which was developed, administered and summarized by the third party evaluator, Northwest Regional Education Laboratory. This questionnaire provided a faculty and student rating of: individualization of the curriculum, choice of learning settings and quality of curriculum.

Revisions in final drafts utilized these evaluations.

COMPETENCY

THE VOCATIONAL EDUCATION CURRICULUM SPECIALIST WILL DEMONSTRATE THE ABILITY TO DEVELOP AND/OR ADOPT PROCEDURES FOR CURRICULUM EVALUATION AND TO ASSIST THE CURRICULUM DEVELOPMENT TEAM IN IMPLEMENTING THIS PROCESS.

CONTENTS

# INTRODUCTION

## Purpose

This module is designed to provide the vocational education curriculum specialist with the necessary knowledge, awareness, and skills to coordinate systematic evaluation in the development and implementation of vocational curricula.

## Rationale

The learning process involves: (1) delineation of goals and objectives, (2) the definition of learning activities, and (3) the assessment or evaluation of the degree to which the objectives are achieved. Evaluation provides the necessary feedback in the learning process to ascertain if appropriate progress is being made towards stated goals (formative evaluation) or the degree to which the goals have been reached - (summative evaluation). Formative evaluation enables the planner, through systematic feedback, to know if the learner is "on course" or if the objectives need modification in content or level of expectation. Summative evaluation enables the planner to make overall judgments and decisions about the success of the learning activities.

## Assumptions

It can be assumed that:

1. All learning involves evaluation or feedback, either formal (planned) or informal (incidental).
2. The most successful type of evaluation will be planned systematically and related to desirable learner goals.
3. The need for systematic evaluation is important because the curriculum specialist will be responsible for introducing new methods and materials and with restructuring existing resources.

4. Decisions based on sound evaluation methods, with carefully and systematically collected data, will be far superior to those based on custom, tradition, and subjective impressions.

## Overview of Module

This module on evaluation will be divided into two parts, each having somewhat unique types of learning activities.

PART I

Part I will include basic concepts and background knowledge about the evaluation process. Content areas will include the usual topics such as evaluation terminology, relationship of evaluation to the learning process, various evaluation models, criteria and design, evaluation instruments, etc. The learning activities will be traditional in nature including broad exposure through reading, individual study, lecture discussion, and written assignments.

Concepts and knowledges gained from the first part of this module will enable the learner to attain the objectives for the "application oriented"

Part II

### Performance Objectives

A summary of specific performance objectives for Part 1 are as follows:

1. Define the terminology and explain the concepts in educational measurement and evaluation.
2. Diagram and explain the relationship between evaluation and other curricular concepts.
3. Explain the key salient features and usage of evaluation models having relevance for vocational education.
4. Select and/or develop criteria that may be applied in evaluation of vocational educational curricula.
5. Specify the sources of error and evaluate the criteria used in measures used to determine student outcomes in vocational programs.

Part II of this module is devoted to learning to carry out the evaluation process and field experience. Objectives 6 and 7 will involve the appraisal of proposals and curriculum guides in the VTE area which, though they do not represent a total curriculum, represent a somewhat complete gestalt of learning activities and provide the learner practice in implementing evaluative criteria in an actual program context.

A variety of curriculum programs, course plans, and project proposals may be supplied by the instructor for review. The evaluation will be carried out in laboratory fashion under the supervision and critique of the instructor.

Objective 8 will be conducted in an actual school or State Department of Education where the total curriculum may be viewed in operation as part of the educational program. A site will be selected, and in cooperation with administrators and staff personnel, the learner (intern) with the guidance of the college supervisor will carry out an actual program evaluation. The results of the evaluation will be forwarded to the administration and faculty of the cooperating agency for their consideration.

Evaluation by the intern will differ from a real, on-going curriculum evaluation in that it will be limited to: (1) time constraints, and (2) specific content areas. Whenever possible, the intern should be provided the opportunity to participate in a comprehensive process evaluation. A summary of the specific performance objectives for Part II are as follows:

Performance Objectives

Part II

6. Assemble, analyze, and interpret evaluation data and present data in an understandable fashion to a variety of audiences.
7. Develop a curriculum evaluation form and evaluate and critique two vocational program proposals and two vocational curriculum guides.
8. Conduct or assist in the development of a program or class evaluation in an actual school setting.

## MODULE PREREQUISITES

Prerequisites for the evaluation module are as follows:

1. Background learning
   a. Basic course in statistics
   b. Course work in measurement and/or evaluation
   c. Background course work in vocational education
2. Experience
   a. Teaching experience in one or more vocational areas
   b. Work experience in a field outside of education desirable
   c. Previous experience in conducting program evaluations desirable

PRETEST

1. The use of specific criteria to evaluate student outcomes related to the students potential success is:

   A. Measurement evaluation
   B. Criterion-referenced evaluation
   C. Domain-referenced evaluation
   D. Formative evaluation

2. The process of evaluation during the construction of a curriculum is:

   A. Summative evaluation
   B. Appraisal evaluation
   C. Formative evaluation
   D. Norm referenced evaluation

   The process of evaluation of student outcomes as compared to national statistics is:

   A. Norm referenced evaluation
   B. Criterion referenced evaluation
   C. Summative evaluation
   D. Goal based evaluation

4. The process of evaluation of a completed curriculum is:

   A. Criterion referenced evaluation
   B. Accountability evaluation
   C. Assessment evaluation
   D. Summative evaluation

5. The process of evaluation based on student outcomes as measured by the content and objectives of the course is:

   A. Grading referenced evaluation
   B. Norm referenced evaluation
   C. Domain referenced evaluation
   D. Assessment referenced evaluation

6. The process of empirically assessing the results of an evaluation is:

   A. Measurement
   B. Appraisal
   C. Summation
   D. Assessment

7. The process of appraising, assessing, and estimating the relevance and outcomes (student and program) of a curriculum is:

   A. Measurement
   B. Evaluation
   C. Summation
   D. Grading

8. The use of a standard to establish a student's progress or achievement is a:

   A. Model
   B. Scale
   C. Norm
   D. Relationship

9. The four types of measurement scales used in evaluation are:

   A. Nominal, correlational, interval, normative
   B. Ordinal, nominal, interval, ratio
   C. Correlational, experimental, normative, formative
   D. Normative, ordinal, formative, summative

10. Two commonly used graphs to visually present evaluation data are:

   A. Kurtosis, frequency polygon
   B. Normal, frequency distribution
   C. Histogram, skewness
   D. Histogram, frequency polygon

11. The four properties used to explain a statistical distribution are:

   A. Normal, leptokurtic, kurtosis, variation
   B. Leptokurtic, central location, skewness, kurtosis
   C. Central location, skewness, kurtosis, variation
   D. Cyclokurtic, skewness, normal, leptokurtic.

12. Three types of measures of variation of a group of data are:

   A. Standard range, norm, central location
   B. Range, standard deviation, percentile
   C. Quantile, central location, percent
   D. Norm, correlation, range

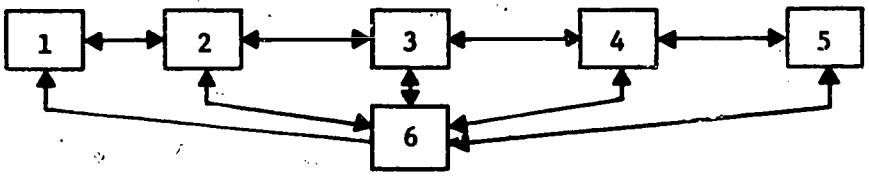
13. The measurement of the degree of relationship between pairs of data is:

   A. Correlation coefficient
   B. Central variance
   C. Quartile deviation
   D. Range

14. The prediction of a score range of a student based on norm referenced measures is:

   A. Student at 3rd grade - 10 month
   B. Grade reporting
   C. Grade equivalent
   D. Both A and C

15. Given below is a schematic for the relationship among evaluation, measurement, and learning. Using the terms provided, match them in the appropriate sequence.




1.____
2.____
3.____
4.____
5.____
6.____

A. Formative/summative evaluation
B. Student outcomes
C. Program goals
D. Affective measures
E. Needs assessment
F. Community programs
G. Performance objectives
H. Instructional strategies

16. The key emphasis of the CSE model is:

A. Procedural consideration of decision making
B. Self assessment
C. Instructional objective
D. Rules for developing programs

17. The CSE model is primarily used to:

A. Determine cause and effect relationship
B. Evaluate the products and process of a program
C. Measure final program outcome
D. Measure student achievement

18. The key emphasis of the Taba model is:

A. Self assessment
B. Instructional goals and objectives
C. Program relevance
D. Cause and effect relationships

19. The Taba Model is primarily used to:

A. Find out what works
B. Determine program revisions
C. Prioritize goals and objectives
D. Measure student achievement

20. The key emphasis of the Tylerian model is:

A. Decision making
B. Operative analysis
C. Instructional objective
D. Cause and effect relationship

21. The Tylerian model is primarily used to:

A. Measure student progress toward objectives
B. Set rules for developing new programs
C. Determine content and procedures of instruction
D. Measure final program outcomes

22. The key emphasis of the CIPP model is:

A. Staff self-evaluation
B. Provide for decision making
C. Ascertain student progress
D. Instructional objectives

23. The CIPP model is primarily used to:

A. Determine content and procedures of instruction
B. Facilitate continuous decision analysis
C. Find an explanation of what works
D. Determine cause/effect relationships

24. The establishment of program standards (criteria) are essential to program evaluation. All of the following represent applicable criteria EXCEPT:

A. State and Federal standards
B. Planning and development, organizing and administration
C. Staffing and operations
D. Cognitive and affective evaluation

25. The establishment of learner outcomes criteria are essential to program evaluation. All of the following represent applicable criteria EXCEPT:

A. Description of learner needs
B. Levels of accepted learner behavior
C. Staff : student ratio
D. Goals and objectives of program

26. The use of observation as an evaluation technique is applicable to vocational programs. When evaluating and/or creating an observation rating scale, which one of the following represents criteria that must be used:

A. Proficiency level and rating criteria
B. Subjectivity learning and rating criteria
C. Error of leniency and proficiency levels
D. Proficiency levels and subjectivity

27. When using an observation sheet which of the following is not a source of error:

A. Instructors knowledge of what to observe
B. Leniency, ego, halo effect
C. Error of generalization, high marks for best students
D. Interferes with learning process, validity

28. An observation sheet is a device designed to aid an evaluator to:

A. quickly observe persons during an activity and to evaluate their performances
B. observe persons and compare their performance
C. standardize their scoring for a particular activity
D. both A and C are correct

29. Pretest evaluation will provide the evaluator with the following kinds of information EXCEPT:

A. Entry abilities
B. Prerequisite knowledges
C. Entry skills
D. Developed knowledge

30. Posttest evaluation will provide the evaluator with the following kinds of information EXCEPT:

A. Developed skills
B. Increased knowledges
C. Increased abilities
D. Developed potential

31. Distractor is to key as:

A. Choice : constant
B. Option : answer
C. Sample : population
D. Error : replica

32. Stem is to options as:

A. Beginning : end
B. Question : answer
C. Right : wrong
D. Condition : responses

33. The level of difficulty for a particular question in item analysis refers t

A. The ease with which one answers the question
B. The relationship of one question to another
C. How difficult one question is to answer by a normal distribution of the population
D. How difficult one question is to answer by a sample of the population

34. One can say that evaluation of learners knowledge about a specific subject can be determined if high quality:

A. questions are developed to cover each of the performance objectives of that unit
B. performance objectives have been achieved
C. questions are developed
D. knowledges are achieved

35. Criterion is to standard as:

A. has : have not
B. what: how much
C. behavior : who
D. how : who

36. Conditions is to behavior as:

A. classroom : discussion
B. pupil : will type
C. learn : in 5 minutes
D. person : must sell at contracted price

37. The term error of measurement are those errors that:

A. Go unnoticed
B. One can predict
C. One has no control of
D. Occurs in connection with the procedure of observing, measuring, counting, etc.

38. Observable change in student behavior provides an evaluator with an indication of which of the following:

A. Intelligence of learner
B. Effectiveness of an instructional unit
C. Interest exhibited by learner
D. Teaching technique effectiveness

39. The first step in developing a plan for an evaluation device is to:

A. Determine the total score or points to be given
B. Analyze learning activities to determine what can be measured
C. State objectives in behavioral terms
D. Determine extent of evaluation needed

40. A normal distribution of learners' achievement can best be established by:

A. Giving unlimited chances to demonstrate ability
B. Giving one chances to demonstrate ability
C. Giving one timed chance to demonstrate ability
D. Giving several timed chances to demonstrate ability

41. A pretest may be brief and informal if:

A. It is known that the learners have no prior experience or instruction
B. The objectives are in the psychomotor domain
C. The objectives are in the affective domain
D. Time is unlimited

42. A usable pretest:

A. Is related to the behavioral objectives
B. Is based on prerequisite knowledge, skills, or attitudes
C. Is limited to paper and pencil tests of basic knowledge
D. Is based on subjective evaluation

43. Objectives are more useful as a guide for developing evaluation devices if they:

A. Are stated in general terms
B. Are limited to specific knowledge of facts
C. Include descriptions of post-instructional behavior
D. Identify the level of performance to be achieved

44. From a selection of foods, the learner will be able to select 3 foods and the amount of each of the 3 foods, which are equivalent to a 2 oz. serving of lean beef as a source of protein. This objective would be classified in which of the following psychological domain(s)?

A. Cognitive
B. Affective
C. Psychomotor
D. Physiological

## PRETEST KEY

1. B
2. C
3. A
4. D
5. C
6. A
7. B
8. C
9. B
10. D
11. C
12. B
13. A
14. D
15. 1 = E
    2 = C
    3 = G
    4 = H
    5 = B
    6 = A
16. A
17. B
18. D
19. A
20. C
21. A
22. B
23. B
24. D
25. C
26. A
27. D
28. D
29. D
30. D
31. B
32. E
33. C
34. A
35. B
36. A
37. D
38. B
39. C
40. D
41. A
42. B
43. D
44. A

POSTTEST

Match the terms with the most appropriate definition:

| | Definitions | Terms |
|---|---|---|
| 1. | ____Empirically assessing the results on evaluation | A. Formative evaluation |
| 2. | ____Evaluating a curriculum during its construction | B. Norm referenced |
| 3. | ____Evaluation based on student outcomes, measured by content and objective of a course | C. Measurement |
| 4. | ____Evaluating a curriculum after its construction | D. Sumative evaluation |
| 5. | ____Criteria against which student outcomes related to student's potential success | E. Evaluation |
| 6. | ____Process of appraising, assessing, and estimating the outcomes (student and program) of a curriculum | F. Correlation coefficient |
| 7. | ____Criteria of student outcomes to national statistics | G. Domain referenced |
| 8. | ____Measurement of degree of relationship between pairs of data | H. Criterion referenced |
| 9. | ____State and federal standards, staffing and operations, planning and development, and administration | I. Norm |
| 10. | ____Standard to establish student progress or achievement | J. Program Standard Criteria |

11. The terms ordinal, nominal, interval, and ratio represent:

A. Graphs
B. Measure of variations
C. Measurement scales
D. Score ranges

12. Two commonly used graphs to visually present evaluation data are:

A. Kurtosis, frequency polygon
B. Normal, frequency distribution
C. Histogram, skewness
D. Histogram, frequency polygon

13. The four properties used to explain a statistical distribution are:

A. Normal, leptokurtic, kurtosis, variation
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15. The prediction of a score range of a student based on norm referenced measures is:

A. Student at 3rd grade - 10 month
B. Grade reporting
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16. Using the terms provided, outline a schematic of the relationship among evaluation, measurement, and learning. Use the letter preceding each term in the schematic to label the elements of your illustration.

A. Student outcomes
B. Program goals
C. Needs assessment
D. Performance objectives
E. Instructional strategies
F. Formative evaluation
G. Summative evaluation

17. The evaluation of products and process of education programs upon which decisions are based are the use and emphasis of which one of the following evaluation models:

A. Tylerian
B. CSE
C. CIPP
D. Popham

18. The key emphasis of the Taba model is:

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19. The Taba model is primarily used to:

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D. Measure student achievement

20. Using the evaluation model to emphasize instructional objectives and find out what works is associated with which one of the following authors:

A. Tyler
B. Taba
C. Popham
D. Stuffelbeam

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23. The use of, description of learner needs, acceptable levels of learner behavior, and goals and objectives of a program are criteria for the evaluation of:

A. Program outcomes
B. Instructor outcomes
C. Learner outcomes
D. Assessment outcomes

24. The use of observation as an evaluation technique is applicable to vocational programs. When evaluating and/or creating an observation rating scale, which one of the following represents criteria that <u>must</u> be used:

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D. Occur in connection with the procedure of observing, measuring, counting, etc.

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B. Effectiveness of an instructional unit
C. Interest exhibited by lear r
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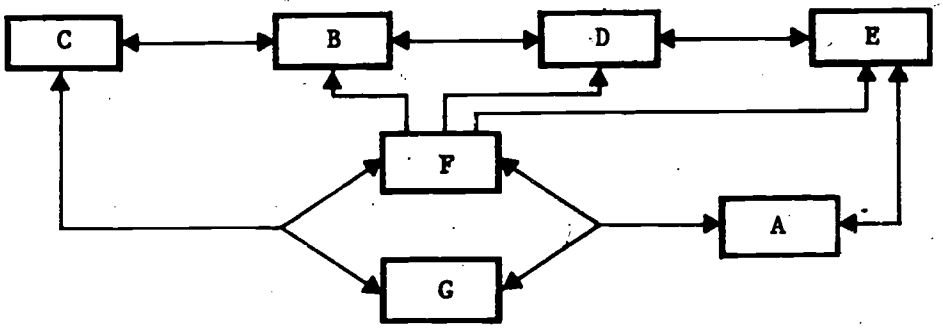
D. Identify the level of performance to be achieved

42. From a selection of foods, the learner will be able to select 3 foods and the amount of each of the 3 foods, which are equivalent to a 2 oz. serving of lean beef as a source of protein. This objective would be classified in which of the following psychological domain(s)?

A. Cognitive
B. Affective
C. Psychomotor
D. Physiological

# POSTTEST KEY

1. C
2. A
3. G
4. D
5. H
6. E
7. B
8. F
9. J
10. I
11. C
12. D
13. C
14. B
15. D
16.




17. B
18. D
19. A
20. A
21. B
22. B
23. A
24. A
25. D
26. D
27. D
28. A
29. B
30. D
31. C
32. D
33. B
34. A
35. D
36. B
37. C
38. C
39. A
40. A
41. D
42. A

## GLOSSARY OF TERMS

Criterion-referenced Measurement - student outcomes as related in specific outcomes related to potential success.

Domain-referenced Measurement - student outcomes as measured by the content and objectives of a course.

Evaluation - appraising, assessing, and estimating the relevance and outcomes of a curriculum.

Evaluation Design - definition of conditions and procedures required to gather evaluation data.

Evaluation Models - processes that establish the format procedure and methods for educational evaluation.

Formative Evaluation - evaluation that occurs during the planning and developing of a curriculum.

Learner Criteria Outcomes - criteria against which the students' performance may be evaluated to assess the degree to which the program meets the learner's needs.

Mastery Learning - emphasizing learning rates rather than learning levels.

Measurement - empirically assessing the results of an evaluation.

Norm-referenced Measurement - students' outcomes as compared to national student outcome statistics.

Program Criteria Standards - criteria against which a program may be evaluated to assess the degree to which the program meets the criteria.

Rating Scale - tool used to evaluate performance of a person or program, based on specific criteria and performance level.

Statistics - mathematical process for using facts and figures in evaluation and measurement.

Summative Evaluation - evaluation of a completed project or curriculum outcome.

Test - a means of evaluating the degree to which a desired outcome was obtained.

# PART I

## BASIC CONCEPTS AND BACKGROUND

## KNOWLEDGE OF EVALUATION

### PERFORMANCE OBJECTIVE 1

Describe and explain the terminology and concepts in educational evaluation.

Learning Activity 1-a

Using the references listed below as a basis, write a brief definition for each of the terms and concepts as they relate to educational evaluation.

| CONCEPTS | TERMINOLOGY |
|---|---|
| 1. Measurement | 1. Norms |
| 2. Evaluation | 2. Graphs, (Histogram, Frequency polygon) |
| 3. Formative Evaluation | 3. Variability (Range, Standard deviation, percentile) |
| 4. Summative Evaluation | 4. Grade equivalent (Norm referenced, Predition of a score range) |
| 5. Assessment/Appraisal | 5. Central location (mean, median, mode) |
| 6. Mastery Learning | 6. Relationships (co-relation) |
| 7. Criterion-referenced Measurement | |
| 8. Norm-referenced Measurement | |
| 9. Domain-referenced Measurement | |

Learning Activity 1-b

Using the concepts and terminology in Learning Activity 1-a, explain their use in presenting conclusions regarding the evaluation of either program outcomes or learner outcomes.

Example - Learning Activity 1-b

Application of the concept of evaluation:

In presenting to an advisory committee the outcomes of a program, the methods for appraising, assessing, and estimating are presented and explained.

Suggested References for Concepts:

Alkin, Marvin C. "Criterion-Referenced Measurement and Other Such Terms." C.S.E. Monograph Series in Evaluation #3. Center for the Study of Evaluation. Los Angeles: University of California, 1974.

Bloom, B.S.; Hastings, J.T.; and Madans, G.H. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw Hill, Inc., 1971. Chapters 4 and 6.

Popham, James W. Educational Evaluation. Englewood Cliffs, NJ: Prentice Hall Inc., 1975. pp. 9-11, 13-15, 104-110, Chapter 7.

Wittrock, M.C., and Wiley David E. The Evaluation of Instruction. New York: Holt, Rinehart, and Winston, Inc., 1970. pp. 26-32, 259-264.

Wiley, C.E., and Schroeder, G.B. Roles of Participants in Educational Accountability. Denver, Colorado: Cooperative Accountability Project, 1974. Chapters 1 and 2.

Suggested References for Terminology:

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Cronback, Lee J. Essentials of Psychological Testing. New York: Harper and Row, 1970. Chapters 4, 5, 6.

Popham, James W. Educational Evaluation. Englewood Cliffs, NJ: Prentice Hall., Inc., 1975. Chapter 6.

## PERFORMANCE OBJECTIVE 2

Diagram and explain the relationships between evaluation and other curricular concepts.

Instructional Objective 2.1

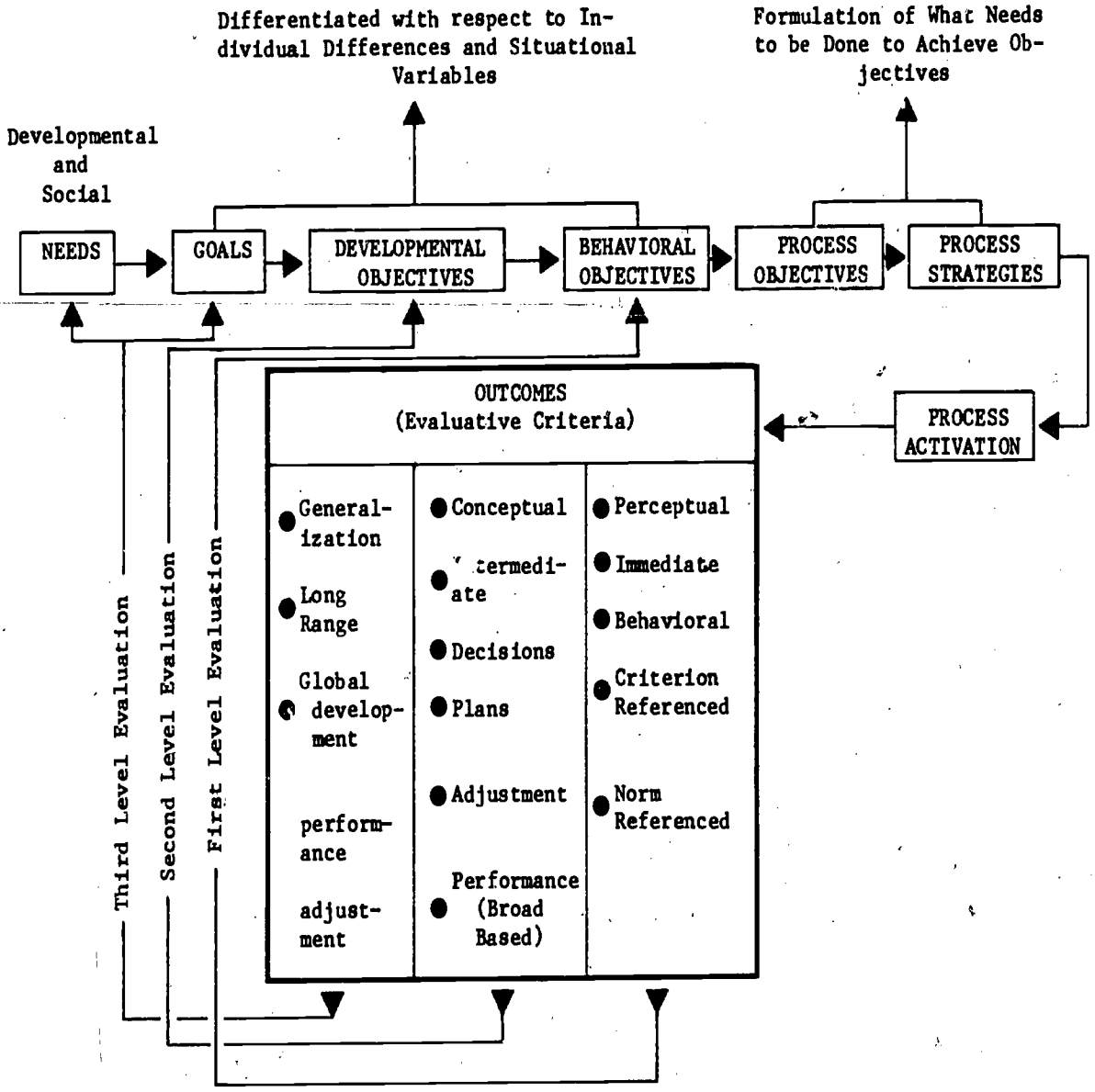
The learner will be able to diagram and explain the relationship between evaluation, learning measurement, and instruction in educational evaluation.

Learning Activity 2.1-a

Given the following reference develop a model to show the relationship between evaluation and instruction/learning.

Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation." Pupil Personnel: A Handbook for Program Development and Evaluation. Columbia, MO: University of Missouri, 1971.

SYSTEMS MODEL FOR GUIDANCE PROGRAM DEVELOPMENT AND EVALUATION




Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation." Pupil Personnel: A Handbook for Program Development and Evaluation. Columbia, MO: University of Missouri, 1971.

28. An observation sheet is a device designed to aid an evaluator to:

A. quickly observe persons during an activity and to evaluate their performances
B. observe persons and compare their performance
C. standardize their scoring for a particular activity
D. both A and C are correct

29. Pretest evaluation will provide the evaluator with the following kinds of information EXCEPT:

A. Entry abilities
B. Prerequisite knowledges
C. Entry skills
D. Developed knowledge

30. Posttest evaluation will provide the evaluator with the following kinds of information EXCEPT:

A. Developed skills
B. Increased knowledges
C. Increased abilities
D. Developed potential

31. Distractor is to key as:

A. Choice : constant
B. Option : answer
C. Sample : population
D. Error : replica

32. Stem is to options as:

A. Beginning : end
B. Question : answer
C. Right : wrong
D. Condition : responses

33. The level of difficulty for a particular question in item analysis refers to

A. The ease with which one answers the question
B. The relationship of one question to another
C. How difficult one question is to answer by a normal distribution of the population
D. How difficult one question is to answer by a sample of the population

34. One can say that evaluation of learners knowledge about a specific subject can be determined if high quality:

A. questions are developed to cover each of the performance objectives of that unit
B. performance objectives have been achieved
C. questions are developed
D. knowledges are achieved

## Brief Explanation of Major Components of Model

The systems model for guidance program development and evaluation provides a framework for the conceptualization of the guidance program in terms of (1) general and specific pupil objectives and outcomes, and (2) program objectives and strategies designed to achieve the pupil objectives. The flow moves from the general to the specific in the development of objectives, with the more specific representing those kinds of objectives and outcomes where the program should make a direct impact. These are the outcomes for which guidance personnel should be willing to assume responsibility and to be held accountable. The following explanations of the various components of the model are directed toward (1) working definitions, and (2) relationships in the systematic flow from need to outcome.

1. Needs. Needs are defined here to include those long range developmental needs of individuals and the general social needs of the society that justify the existence of a guidance program. They provide the underlying rationale for the program and the basis for developing goals and objectives. Such needs should be related to the guidance program but by their broad global nature may involve many other programs, people, and circumstances. For example, a developmental need of individuals might be to become a satisfied and productive worker. The guidance program should contribute to helping individuals satisfy this need, but training institutions, parents, employers, and many others also may influence the outcome.

Needs relevant to this model originate from two basic sources (1) human developmental theories, and (2) social needs in a democratic society. Those theoretical formulations most directly related to the guidance program include career development theories, personality theories, learning theories, and human need and development theories. The theory or theories that undergird any local guidance program should be identified and used to build the rationale for the development of pupil goals and objectives, includ-

ing the part that guidance activities may play in the total educational, vocational, or social development of individuals. The basic social needs are less directly related to pupil-centered guidance objectives, but should have a direct bearing upon the program rationale. For example, individual economic self-sufficiency may represent a general social need related to contributions of the guidance program, but again the broad and remote nature of needs suggests that there will be many factors, other than guidance, influencing the outcome. Specification of needs is desirable to build a foundation from which goals and objectives can be stated in more meaningful and manageable terms.

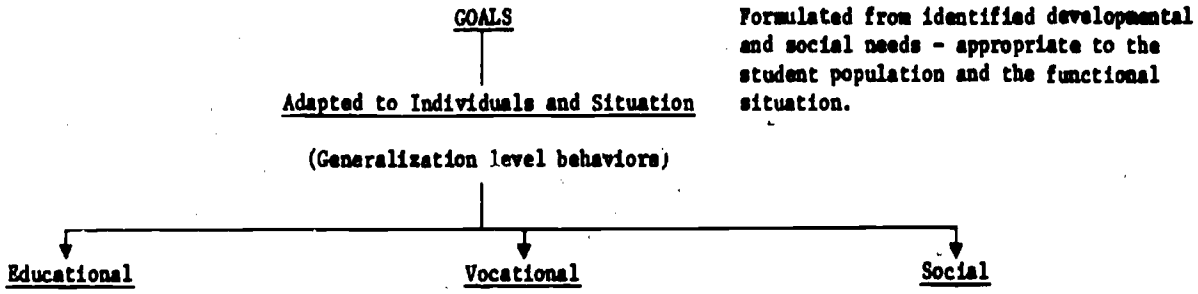
2. Goals. Goals are the reasonably long range operational delineations of needs. They are more specific than needs, but still too far removed and too confounded by other influences to serve as workable objectives for the guidance program. Goals take on relevance for individuals, in that they will vary among individuals and from one situation to another. The general need for all individuals to become vocationally competent is thus defined in terms of goals that specify that particular individuals complete a training program that will qualify them to enter a specific occupational area that is consistent with their abilities and interests. Goals represent rather large global areas of achievement or development that lead to meeting specified needs, and provide the point of departure for the formulation of developmental and behavioral objectives.

3. Developmental Objectives. The developmental objectives relate to the guidance-related developmental steps that are logically, and usually sequentially, related to the stated goals. For example, before an individual can achieve the occupational competence goal stated above, there are a number of vocational and educational decisions that need to be made. Each such decision can become a developmental objective for the guidance

program. Likewise, a series of plans may need to be formulated and these can become objectives. Certain situational adjustments may also relate to the goal, as may intermediate range performance, such as completion of prerequisite courses and curricula. Thus, many developmental objectives may be formulated to operationally define the hypothesized guidance contributions to a single goal. Again, it is easy to see that the achievement of many developmental objectives may be influenced by other factors, and the related guidance activity may be only one small part of a rather complex process. There are, however, many developmental objectives for which guidance personnel should be willing to assume major responsibility. Developmental objectives have particular significance in differentiating desired outcomes for different age and grade groups. For example, the objective to develop an appreciation for work in everyone's life may be quite relevant for a primary grade group, while the junior high school group may need to develop an appreciation for work as a very personal part of their lives. Each developmental objective should be stated and related to program so that the part that guidance may contribute is clearly understood. This can be done through the formulation of behavioral objectives.

4. Behavioral Objectives. Behavioral objectives should specify in concrete terms the knowledge, skill, or performance that is expected. These objectives should be related directly to a specific guidance activity and at least logically to a developmental objective. They are usually short range in terms of time and should always be related to specific criteria for determining whether the objective has been achieved and often the degree of achievement. The developmental objective to make a decision regarding post high school education may provide the basis for specifying relevant behavioral objectives spelling out the kinds and extent of awareness of

self and environment needed to make the decision. The developmental objective requires that individuals conceptualize self in the educational-vocational situation. This conceptualization requires that they be aware of their abilities, interests, resources, etc., and of the environmental opportunities, requirements, etc., and that they be able to demonstrate such awareness by showing that they have specific knowledge of these relevant variables. Behavioral objectives are crucial to adequate program development, provide the most objective basis for evaluation, and make developmental objectives and goals meaningful by defining sequential developmental relationships in terms of behavior that can be described from observation, objective measurement, and self-reports. For example, comprehensive career development theory can provide the basis for determining behavioral objectives appropriate to the maturity level of the pupils and related to the sequential developmental objectives that lead to the longer range vocational goal. (See examples of vocational goals from the chart on the following page.)




Examples of goals:

1. Regularity of school attendance or reduction of absences.
2. Individual and group contributions to the school community - constructive participation - reduction of interruptions to order, etc.
3. Value education and develop aspirations consistent with abilities and interests.
4. Successful completion of successive educational programs or reduction of premature dropouts.
5. Pursue higher levels of education consistent with individual level of general and specific abilities and interests.
6. Seek out and participate in new educational opportunities.
7. Value and support education throughout life.

Examples of goals:

1. Commitment to a chosen vocation.
2. Participation in and completion of education program necessary for entrance in chosen vocation.
3. Individual derive personal satisfaction from the pursuit of a vocation.
4. Vocational success - employment - satisfaction - progress.
5. Development and utilization of individual abilities and interests through vocational pursuits.
6. Reduction of social problems related to vocational adjustment:
   (a) unemployment
   (b) underemployment
   (c) poverty
   (d) crime

Examples of goals:

1. Develop and use effectively behaviors consistsnt with social demands - family - peers - school - community.
2. Develop and display appropriate social roles in terms of setting and group.
3. Value social interaction and socially acceptable experiences.
4. Contribute to the social growth and effectiveness of others.
5. Develop openness to the ideas, values, and experiences of others.
6. Continue to grow through social experiences.
7. Become a socially responsible and contributing citizen.

Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation." Pupil Personnel: A Handbook for Program Development and Evaluation. Columbia, MO: University of Missouri, 1971.

## Specifying Workable Objectives and Achievable Outcomes[1]

The specification of meaningful objectives and the use of appropriate criteria to estimate the achievement of objectives are essential for adequate evaluation. The difficulties encountered in accomplishing these tasks have, no doubt, discouraged many guidance workers from undertaking comprehensive outcome studies. The basic requirements for stating vocational guidance goals, objectives, and outcomes follow the major parts of the systems model with the added criterion of feasibility imposed at each step in the process.

1. Objectives should be oriented to identified student needs (educational, vocational, and social.)
2. Objectives should be consistent with societal values and professional philosophy.
3. Objectives should be stated so they can be translated into expected behavioral outcomes (relevant to the primary purposes of vocational guidance.)
4. Behavioral outcomes should be defined operationally so that they can be quantified in terms of knowledge, skills, performance, and attitudes.
5. The data needed and methods for measuring and reporting behavioral manifestations should be specified for each objective and outcome.
6. Objectives and outcomes should meet the test of relevancy for the student sample (such as grade level, sex, etc.) and the operational situation (such as type of school, demographic characteristics, etc.)

A framework for the specification of guidance objectives is part of the proposed National Study of Guidance. This taxonomy may serve as a guide for the specification of vocational guidance objectives and outcomes that meet the above

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[1] Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation." (Excerpts from a paper presented for discussion at 64th Annual American Vocational Association Convention, New Orleans, Louisiana, December 7, 1970.)

requirements and those of the systems model. The following outline shows the major categories of guidance objectives included in this taxonomy.

1.0 Perceptualization Objectives. The development of awareness and differentiations of relevant environmental and self variables.

1.1 Environmental Orientation. Knowledge and understanding of educational, vocational, and social opportunities, requirements, and expectations.

1.2 Self-Orientation. Knowledge and understanding of abilities, limitations, identities, feelings, and motivations relevant to educational, vocational, and social development.

2.0 Conceptualization Objectives. The process of analyzing relationships, making predictions, evaluating consequences, and taking actions relevant to educational, vocational, and social goals.

2.1 Directional Tendencies. Formulation of decisions and plans, and the development of interests and value attachments which result in increasing stability and consistency in movement toward educational, vocational, and social goals.

2.2 Adaptive and Adjustive Behavior. Development of coping behavior to meet educational, vocational, and social requirements and expectations.

3.0 Generalization Objectives. The development of a behavior pattern typified by consistency, commitment, effectiveness, and autonomy.

3.1 Accommodation. The psycho-social ability to cope with cultural and environmental demands.

3.2 Satisfaction. The internal self interpretations of environmental transactions.

3.3 Mastery. The congruency of expected or predicted achievement with external criteria of achievement.

The following example illustrates how the taxonomy can be used for the specification of objectives and outcomes. Assuming a group of tenth grade

boys in a comprehensive high school and using objective 2.2-1 from the vocational domain of the taxonomy, the resultant organization for evaluation might be:

Objective: For the student to identify occupational alternatives that are consistent with his abilities and claimed interests.

Process: Ten week occupational orientation supplemented with three individual counseling conferences with each boy.

Expected Outcome: Each boy will be able to list at least one occupation consistent with his abilities and claimed interests, and 75% of the boys will be able to list five or more such occupations.

References:

Bloom, B.S.; Hastings, J.T.; and Madans, G.H. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw Hill Inc., 1971. Chapters 4 and 6.

Moss, Jerome Jr., and Stromsdorfer, Ernst W. "Evaluating Vocational and Technical Education Programs," Vocational Education: Today and Tomorrow, Editors Gerald Somers and Kenneth Little. Center for Studies in Vocational Education, University of Wisconsin, 1971. Chapter 9.

Payne, David A. The Assessment of Learning: Cognitive and Affective. Lexington, MA: D.C. Heath, 1974. Chapter 1.

Popham, James W. Educational Evaluation. Englewood Cliffs, NJ: Prentice Hall Inc., 1975. Chapter 4.

Tyler, Ralph; Gagne, Robert; and Scriven, Michael. "Perspections on Curriculum Evaluation," AERA Monograph Series on Curricula Evaluation #1. Chicago, IL: Rand McNally, 1967.

Wandt, Edwin and Brown G.W. Essentials of Educational Evaluation. New York: Henry Holt and Co., 1967. Chapter 1.

Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation," Pupil Personnel: A Handbook for Program Development and Evaluation. Columbia, MO: Univer 'ty of Missouri, 1971.

Wittrock, M.C., and Wiley, David E. The Evaluation of Instruction. New York: Holt, Rinehart, and Winston, Inc., 1970. Chapter 1.

PERFORMANCE OBJECTIVE 3 ●●●

Explain the key salient features and usage of evaluation models having relevance for vocational education.

Instructional Objective 3.1

The learner will be able to describe the usage and emphasis of four evaluation models.

Learning Activity 3.1-a

Consult the list of references and complete the "Grid on Prototypes of Curriculum Evaluation."

References:

Bloom, B.S.; Hastings, J.T.; and Madans, G.H. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw Hill Inc., 1971. Chapters 2, 4, 6.

Popham, James W. Educational Evaluation. Englewood Cliffs, NJ: Prentice Hall Inc., 1975. Chapter 2.

Taba, Hilda. Teaching Strategies and Cognitive Functioning in Elementary School Children. Cooperative Research Project No. 2404. San Francisco, CA: San Francisco State College, 1966.

Wellman, Frank E. "Systems Model for Guidance Program Development and Evaluation," Pupil Personnel: A Handbook for Program Development and Evaluation. Columbia, MO: University of Missouri, 1971.

GRID

PROTOTYPES FOR CURRICULUM EVALUATION

| MODEL | KEY EMPHASIS | KEY USE | KEY ACTIVITIES | OUTSIDE EXPERTS NEEDED | TEACHING STAFF INVOLVEMENT | RISKS | APPLICATION |
|---|---|---|---|---|---|---|---|
| 1. School accreditation | staff self-study | review and content procedures of instruction | discussion & professional judgments | none - unless other professionals | high involvement essential, evaluation based on staff impact | subjective, extensive, time involvement of staff. | involves staff in leadership and program/instructional evaluation |
| 2. Cause and Effect H. Taba | | | | | | | |
| 3. CSE Al Kinetal | | | | | | | |
| 4. CIPP Don Stufflebeam | | | | | | | |
| 5. Goal Attainment R. Tyler | | | | | | | |
| OPTIONAL<br>6. Formative - Summative Bloom, et. al | | | | | | | |

PERFORMANCE OBJECTIVE 4 ●●●●

Select and/or develop criteria that may be applied in evaluation of vocational education curricula.

Learning Activity 4-a

Using the examples*provided by the instructor, distinguish between "program standards criteria" and "learner outcome criteria;" state how they interrelate, and their relevance for evaluating vocational educational curricula.

*The examples, which follow, are:

1. Offensiveness Criteria
2. A Summary of Educational Evaluation Guidelines
3. Elements of a Quality Career Guidance, Counseling and Placement Program
4. Career Development Program: An Example

## Offensiveness Criteria[1]

The following classifications of subject matter indicate the types of material considered offensive:

1. Invasion of privacy. Questions in any way connected with family financing are offensive. Included would be questions dealing with how much an individual earned or received as an allowance, how income is budgeted, what contributions are made, and what taxes are paid.

   Exercises dealing with parents' relationships with their children. Included would be questions such as, "When was the last time you had to scold or punish one of your children for not minding you?"

   Efforts to observe actual behavior with respect to health and safety rules. For instance, the inspection of homes and cars to see if they are in a safe condition, or the attempt to observe children in washrooms to see if they followed health rules pertaining to the washing of hands would be considered offensive.

   Asking teachers, counselors, or employers to rate an individual's performance as compared to the performance of others was considered an invasion of privacy.

2. Ethnic minority groups. Material which might be interpreted as demeaning the blacks (old Negro dialect) or some other minority group was considered offensive.

   References to specific minority groups should be eliminated whenever possible. There should not be an over-weighting of exercises dealing with race or blacks. More exercises about other ethnic and minority groups should be included.

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[1] Criteria utilized by lay panels who evaluated the possible effectiveness of items included in exercise in the NAEP program: The National Assessment Approach to Exercise Development. pp. 42-46.

3. Sex. Literary passages with sexual references or themes, such as Oedipus Rex, should be very carefully chosen as they have a great potential for offensiveness.

   Questions dealing with birth control, unless very carefully stated, should be avoided.

4. Religion. The area of religion was considered so sensitive that it could not be handled without emotional reaction.

   Reference to the "God is Dead" movement was considered too controversial to use.

   However, religious music could be used on tapes as long as one did not have to identify it or relate it to religion.

   Religious subjects could be used on art plates.

5. Human rights. Exercises dealing with human rights must be worded carefully to reduce implications which are offensive. For instance, the statement, "The number of murders increased in a neighborhood where blacks and whites lived together," can be interpreted to imply that there is more violence where blacks are. Another exercise implied that only the "poor" steal. The overabundance of exercises dealing with a person's rights was considered offensive unless more exercises were added dealing with their responsibilities in a free society.

6. Emotion-arousing terms. Any reference to sex, unwed mothers, divorce, whiskey, the FBI, the President, Communism and specific organizations, such as the Ku Klux Klan and labor unions, might make an exercise offensive unless extreme care was used in the wording. The terms "protest meetings" and "demonstrations" apparently evoke emotional reactions. Preferable wording might be "public meetings on behalf of" or "in protest of."

7. Violence or cruelty. Exercises dwelling on violence or cruelty were considered offensive.

8. Words in poor taste. Passages with certain words or phrases were considered inappropriate for use in the assessment (e.g., a poem that includes the line, "sportive ladies leave their doors ajar," or references to dope, divorce and drunkenness for ages 9 and 13).

9. Censorship. Affective exercises in the area of censorship which indicate a restriction of a family member (e.g., "my brother") should be avoided. Questions such as "I would not allow my child to see a movie in which there is an adulterous love affair" are personal questions about one's behavior and are emotion-arousing, so are felt to be an invasion of privacy.

   Statements about censorship in general are less offensive. "I think movies with adulterous love affairs should be banned" is an expression of an objective opinion. It does not threaten one's privacy, and hence is much less offensive.

10. Uncomplimentary comments about specific groups or individuals. Exercises which show national heroes in an uncomplimentary fashion, though factually accurate, are offensive.

    Exercises which might be interpreted as putting the police or other authorities in an unfavorable light are offensive.

    Negative statements about any group (e.g., "All politicians are corrupt.") or attitude statements which infer that a group of people are peculiar (e.g., scientists) are offensive.

    Exercises about highly controversial figures, such as the late Senator Joseph McCarthy, should be neither too critical nor too favorable.

11. Inferiority of other nations. Any exercise implying the inferiority of other nations or exercises which imply the superiority of Americans to people in less well developed countries are offensive.

12. Questioning one child about another's behavior. The suitability of obtaining

information from one youngster about another was strongly questioned, as it would seem to encourage "tattling" and would probably not obtain any information which couldn't be obtained in a more reliable way.

13. Darwinian theory. Questions which require the interpretation of Darwinian theory were considered objectionable. However, there was no objection to factual questions regarding the nature of Darwin's theory.

14. Civil War. In exercises about the Civil War, care must be taken to eliminate terms such as "hatred," "forced upon the South," or implications that the North was better than the South.

An example of an exercise which was dropped because the lay reviewers felt that it implied the inferiority of another nation was the following literature exercise.

Directions:

Read the paragraph below carefully and then circle the letter by the character or tale that you think the story is based on.

> When the explorers arrived at the head of the river, they were surprised. They'd expected the natives to be dirty thieves, cannibals even. But they were treated with greater courtesy than they would have been in the United States. These people were ignorant, yes, but clean, generous, and highly moral.

(a) The New Breed

(b) The Noble Savage

(c) The White Man's Burden

(d) The Old Adam

## A Summary of Educational Evaluation Guidelines

excerpt from

Popham, W. James. An Evaluation Guidebook. Los Angeles, CA: The Instructional Objectives Exchange, 1972.

1. The educational evaluator should encourage the use of instructional objectives which provide explicit descriptions of the post-instructional behavior of learners.
2. While recognizing that nonmeasurable goals will be of limited use for their purposes, educational evaluators must be aware that instructors may wish to devote a reasonable proportion of their efforts to the pursuit of important but currently unassessable objectives.
3. The educational evaluator must identify criteria of adequacy when using instructional objectives which require constructed responses from learners.
4. The educational evaluator should foster the use of measurable objectives which possess content generality rather than test item equivalence.
5. Prior to the introduction of the instructional treatment, educational evaluators should strive to establish minimal proficiency levels for instructional objectives.
6. The educational evaluator will often find the Taxonomies of Educational Objectives useful both in describing instructional objectives under consideration and in generating new objectives.
7. The educational evaluator should consider the possibility of selecting measurable objectives from extant collections of such objectives.
8. The educational evaluator should avoid the use of norm-referenced measures, preferring instead criterion-referenced measuring devices.
9. The educational evaluator should use domain-referenced achievement testing procedures when called on to generate test items for objectives.

or to determine the content validity of already developed test items.

10. The educational evaluator should encourage the use of multiple criterion measures by generating alternative schemes for assessing learner behaviors.
11. When the use of customary measuring tactics may produce reactive effects, the educational evaluator should employ unobtrusive measures.
12. The educational evaluator should be particularly attentive to unanticipated outcomes which result from an instructional treatment, and should use such outcomes in judging the merits of the treatment.
13. The educational evaluator should clarify value preferences of various groups regarding desired educational goals by having sets of precisely stated objectives rated by the individuals involved, then translating these ratings into composite indicators of each objective's worth.
14. The educational evaluator can compare preference and performance data by contrasting preference ratings of objectives with measures designed to assess the degree to which learners have achieved those objectives.
15. Whenever large scale measurement is required, the educational evaluator should consider the economic advantage of employing item sampling and person sampling procedures.
16. In conducting formative evaluations, the educational evaluator will find it useful to (1) employ small samples of learners, (2) secure performance data regarding terminal and en route objectives, (3) use designs such as the one shot case study or the one group pretest-post-test design.
17. In conducting summative evaluations, the educational evaluator should prefer the use of designs involving randomized control groups, that is, the pretest-posttest control group design or the posttest only control group design. When randomization is impossible, the evaluator can profitably employ the nonequivalent control group design or the inter-

rupted time series design.

18. The educational evaluator should analyze data according to the smallest independent units available, frequently leading to the use of classroom or larger units rather than individual pupil units.

19. The educational evaluator should, in general, prefer descriptive statistics and estimation procedures instead of statistical hypothesis testing procedures.

20. The educational evaluator should present decision-makers with a wide range of pertinent information so that choices among alternatives can be made in a cost/effectiveness context.

## Elements of a Quality Career Guidance, Counseling and Placement Program*

| ELEMENT #1 - Program Planning and Development | YES | NO |
|---|---|---|
| 1.1 Philosophy, assumptions, and conceptual foundations | | |
| 1.11 Does the program have a stated philosophy? | ____ | ____ |
| 1.12 Was the philosophical statement developed prior to 1968? | ____ | ____ |
| 1.13 Are program assumptions tied to a theoretical foundation? | ____ | ____ |
| 1.14 Is the program built on performance objectives in terms of both process and outcome? | ____ | ____ |
| 1.2 Initial needs assessment | | |
| 1.21 Can the program planning team be identified? | ____ | ____ |
| 1.22 Were community attitudes and expectations toward career guidance, counseling, and placement programs assessed? | ____ | ____ |
| 1.23 Were educators' attitudes and expectations toward career guidance, counseling, and placement programs assessed? | ____ | ____ |
| ELEMENT #2 - Organization and Administration | | |
| 2.1 Organizational structure or pattern | | |
| 2.11 Can the type of organizational model implemented be identified? | ____ | ____ |
| 2.12 Can lines of responsibility, authority, and accountability be identified? | ____ | ____ |
| 2.13 Can lines of communication within the operational staff be described? | ____ | ____ |
| 2.2 Management style | | |
| 2.21 Can the management style be identified? | ____ | ____ |
| 2.3 Funding and allocation patterns | | |
| 2.31 Can the funding needs be identified? | ____ | ____ |
| 2.32 Can responsibility for resource allocations be identified? | ____ | ____ |
| 2.33 Can tasks, assignments be identified? | ____ | ____ |

| | YES | NO |
|---|---|---|
| 2.4 Facilities, equipment, and materials | | |
| 2.41 Can facilities, equipment, and materials be described? | ____ | ____ |
| 2.42 Can the age and condition of the above be described? | ____ | ____ |
| 2.43 Can the type and number of clerical support staff be described? | ____ | ____ |
| ELEMENT #3 - Staffing | | |
| 3.1 Pre-entry training and experience | | |
| 3.11 Do prerequisites exist for all levels of staff working in the career guidance, counseling, and placement program, including professional, peer, clerical, and volunteer? | ____ | ____ |
| 3.12 Do the recruitment procedures exist for securing trained staff at all levels? | ____ | ____ |
| 3.13 Does the recruitment procedure reflect program needs? | ____ | ____ |
| ELEMENT #4 - Program Operations | | |
| 4.1 Scope, sequence, and distribution | | |
| 4.11 Is the program implemented at all grade levels? | ____ | ____ |
| 4.12 Does the program effectively impact all students, including special needs of special or unique student populations? | ____ | ____ |
| 4.13 Are career development activities arranged in a developmental sequence? | ____ | ____ |
| 4.2 Patterns of program articulation, communications, and interaction within the school system | | |
| 4.21 Is there articulation and interaction with the total curriculum? | ____ | ____ |
| 4.22 Is the program interpreted to the total school community? | ____ | ____ |
| 4.23 Is the program articulated with supporting program, e.g., school psychology, special education? | ____ | ____ |
| 4.24 Is the program articulated across the grade levels? | ____ | ____ |
| 4.25 Are inter-program referrals within the school system facilitated? | ____ | ____ |
| 4.3 Articulation, coordination, and liaison between the school and community systems | | |
| 4.31 Is the program articulated with community agencies? | ____ | ____ |

| | YES | NO |
|---|---|---|
| 4.32 Is use made of outside referral agencies? | ____ | ____ |
| 4.33 Is feedback elicited from community agencies and utilized? | ____ | ____ |
| 4.4 Strategies for program change and revision | | |
| 4.41 Are methods for implementing needed program revision identified? | ____ | ____ |
| 4.42 Is the basis for program revision continuous, annual, or otherwise identified? | ____ | ____ |
| 4.43 Are revisions future oriented, i.e., anticipatory rather than reactive? | ____ | ____ |
| ELEMENT #5 - Evaluation | | |
| 5.1 Continuing needs assessment and evaluation | | |
| 5.11 Are needs assessed on a continuing basis? | ____ | ____ |
| 5.12 Is data maintained with which to assess needs? | ____ | ____ |
| 5.13 Can sources of feedback information and data used to evaluate local programs be identified? | ____ | ____ |
| 5.14 Can type and sophistication of program evaluation and research models be identified? | ____ | ____ |
| 5.15 Is there articulation with planning and development phases of the program? | ____ | ____ |

*Coordinating Council for Occupational Education, Olympia, WA, 1975.

CAREER DEVELOPMENT PROGRAM: AN EXAMPLE

1.0 GOAL: SELF (AWARENESS/IDENTITY). To understand self in relation to the nature of occupations in order to plan a career. The major focus emphasizes both an understanding and acceptance of personal characteristics through a developmental process toward the utilization of self-knowledge in formulation of career planning (Wellman, 1971).

LEVEL K-3

DEVELOPMENTAL OBJECTIVE:

1.1 To develop an awareness of personal characteristics.

BEHAVIORAL OBJECTIVES:

1.11 To describe orally one's personal characteristics.

1.12 To describe orally how one differs from and resembles others.

1.13 To describe orally the behavior that accompanies basic feelings.

1.14 To describe orally one's current interests.

PROCESS OBJECTIVES AND STRATEGIES:

1.11 Use illustrated films, books and graphs to provide basis for identifying parts of the body and teaching vocabulary terms (Gysbers and Moore, 1971).

1.12 Ask individual to look in full length mirror and describe self (Gysbers and Moore, 1971).

1.13 Ask individual to identify vocabulary words associated with pictures depicting various emotions (Gysbers and Moore, 1971).

1.14 Provide an opportunity for an individual to show and tell what he/she liked and/or disliked (Gysbers and Moore, 1971).

1.15 Ask individual to look at a photo of self and reproduce the image (Gysbers and Moore, 1971).

1.16 Ask individual to trace body outline on large poster paper.

1.17 Ask individual to measure and chart weight and height.

OUTCOMES:

1.11 Ability to describe appearance from photo of self.

1.12 Ability to name ways in which people differ.

1.13 Ability to describe five vocabulary words related to feelings.

1.14 Ability to rank order a list of ten activities according to personal preference (Gysbers and Moore, 1971).

EVALUATION:

1.11 Establish pre- and post-test differences.

1.12 Establish grade level criterion standards.

1.13 *

1.14 *

LEVEL 4-6

DEVELOPMENTAL OBJECTIVES:

1.2 To develop ability to assess own characteristics.

BEHAVIORAL OBJECTIVES:

1.21 To verbally differentiate between strengths and weaknesses in academic disciplines, measured by standardized tests (Gysbers and Moore, 1971).

1.22 To demonstrate understanding of own physical abilities and limitations by verbally differentiating between activities which individual can and cannot perform (Gysbers and Moore, 1971).

1.23 To describe own self in terms of interests, abilities, values, etc., as they relate to work (Wellman, 1971).

1.24 To describe own characteristics that others like.

PROCESS OBJECTIVES AND STRATEGIES:

1.21 Have individuals meet with their teacher to discuss their achievements, abilities, and limitations. Large and small group discussion of same.

1.22 Administer teacher-made test which measures skill in several areas.

1.23 Give individual the opportunity to work with the Hall Occupational

* The blanks provide space to begin developing a new model for career development.

Orientation Inventory.

1.24 Have individuals discuss with peers and teachers what characteristics others like in them.

OUTCOMES:

1.21 Ability to rank order a list of subject disciplines according to relative strengths (Gysbers and Moore, 1971).

1.22 Ability to designate from a list of physical exercises those which they can and cannot perform, with one example of each.

1.23 Ability to list general descriptive characteristics, work descriptive characteristics related to various occupations, and characteristics that describe self.

1.24 *

EVALUATION:

1.21 Determine percentage of individuals (75% required for objective achievement) meeting criterion standard for grade group (Wellman, 1971).

1.22 Compare individual teacher observations of likable characteristics.

LEVEL 7-9

DEVELOPMENTAL OBJECTIVE:

1.3 To assume responsbility for continuous self appraisal (Gysbers and Moore, 1971).

BEHAVIORAL OBJECTIVES:

1.31 To demonstrate knowledge about self and the dynamic nature of perscnal characteristics by identifying recent changes in interest.

1.32 To demonstrate ability to gather self-information from both internal/external sources by writing a self-appraisal (Gysbers and Moore, 1971).

1.33 To assume responsibility to make a positive effort toward improving a personal weakness identified in a process of self appraisal (Gysbers and Moore, 1971).

1.34 To recognize the relationships between personal characteristics and

broad occupational clusters (Wellman, 1971).

PROCESS OBJECTIVES AND STRATEGIES:

1.31 Have individual exhibit knowledge of self in a written report-style activity.

1.32 Use interview techniques to gain information.

1.33 Provide opportunity for small group discussion.

1.34 Provide opportunity to experience simulation games.

1.35 Provide opportunity for role-playing and field trips.

OUTCOMES:

1.31 Self-estimate of the desired level of occupation is more consistent with the accessible level of occupation.

1.32 Aspirational and achievement self-estimations have few inconsistencies (Wellman, 1971).

1.33 Aspirational and achievement self-estimation is more congruent with teacher/counselor estimates of realistic aspirations for the individual (Wellman, 1971).

1.34 *

EVALUATION:

1.31 Compare pre/post differences between aspirational and achievement self-estimates (Wellman, 1971).

1.32 Have individual list five personal characteristics related to occupational clusters.

1.33 *

LEVEL 10 - 12

DEVELOPMENTAL OBJECTIVE:

1.4 To formulate tentative career plans consistent with knowledge of self.

BEHAVIORAL OBJECTIVES:

1.41 To make a tentative career choice that is consistent with measured

ability, past achievements, expressed and measured interests, measured physical abilities and limitations and expressed values (Gysbers and Moore, 1971).

1.42 To formulate a career plan which will provide fulfillment of aspirations, personal needs, values, and lifestyle preferences (Wellman, 1971).

1.43 To identify successes and failures within individual's educational program.

1.44 *

PROCESS OBJECTIVES AND STRATEGIES:

1.41 Provide opportunity for cooperative work experience.

1.42 Provide opportunity for occupational visits.

1.43 Provide writing opportunity to relate work to life style (A K-12 Guide/ Wisconsin, 1971).

1.44 Provide experiences with simulation learning games and role-playing (Wellman, 1971).

OUTCOMES:

1.41 Ability to estimate interests and aptitudes in each of ten basic areas.

1.42 Ability to list three or more school subjects related to each of ten basic areas of interests and aptitudes.

1.43 Ability to list three or more vocations and/or jobs related to ten basic areas of interests and aptitudes.

1.44 Estimate of interests is congruent with estimate of aptitudes in each of ten basic areas.

EVALUATION:

1.41 Evaluate individual responses with outcome criteria for the three levels of learning (Wellman, 1971).

1.42 Establish congruency between individual and teacher-counselor identification of success and failure in the program.

1.43 *

2.0 GOAL: CAREER AWARENESS. To develop awareness of the sociological, economical, and psychological aspects of the world of work. Achievement of the goal through developmental progress and utilization of occupational knowledge in formulation of career pattern in terms of potential satisfaction (Wellman, 1971).

LEVEL K-3

DEVELOPMENTAL OBJECTIVE:

2.1 To develop an awareness of the necessity/desirability of work.

BEHAVIORAL OBJECTIVES:

2.11 To describe necessity for work in society and its desirability (Wellman, 1971).

2.12 To describe the consequences of someone not choosing their work.

2.13 To name workers the individual is dependent upon.

2.14 *

PROCESS OBJECTIVES AND STRATEGIES:

2.11 Discuss goods and services used by individual's family.

2.12 Discuss occupations of parent, relative, or friend.

2.13 Discuss occupations of teachers and why they need students.

2.14 Schedule outside speakers for the class to discuss what they do for society.

OUTCOMES:

2.11 Ability to list reasons why people work (Wellman, 1971).

2.12 Ability to name range of occupational clusters.

2.13 Ability to name services provided to society by outside speakers.

2.14 *

EVALUATION:

2.11 Evaluate established behavioral objectives.

2.12 Establish four or five clusters as criteria standard.

2.13 Use criteria standards of teacher for services of outside speakers.

LEVEL 4-6

DEVELOPMENTAL OBJECTIVE

2.2 To develop an awareness of how occupational clusters differ.

BEHAVIORAL OBJECTIVES:

2.21 To describe a variety of occupational clusters.

2.22 To distinguish goods and services in industries.

2.23 To list occupations required by the community.

2.24 *

PROCESS OBJECTIVES AND STRATEGIES:

2.21 Use illustrative text material to point out various job aspects.

2.22 Have individual divide parents' occupations into goods and services industries.

2.23 Have individuals invite city manager or equivalent to speak with them.

2.24 *

OUTCOMES:

2.21 Increased knowledge of job requirements, characteristics, and rewards of a variety of clusters (Wellman, 1971).

2.22 Ability to describe differences between goods production and service industries.

2.23 Ability to, in writing, give reasons why certain occupations are required by the community.

2.24 *

EVALUATION:

2.21 Establish criteria standard, five-cluster minimum.

2.22 Establish performance level categorization: 5-good, 4-fair, 3-minimum.

2.23 *

LEVEL 7-9

DEVELOPMENTAL OBJECTIVE:

2.3 To develop awareness of values related to self and environment related to careers.

BEHAVIORAL OBJECTIVES:

2.31 To recognize certain sociological, economic, and psychological aspects of society and the influence upon careers (Wellman, 1971).

2.32 To recognize a wide variety of occupations which may be classified several ways (A K-12 Guide/Wisconsin, 1971).

2.33 To recognize supply and demand has an influence on career opportunity (A K-12 Guide/Wisconsin, 1971).

2.34 *

PROCESS OBJECTIVES AND STRATEGIES:

2.31 Provide experiences with simulation learning "Career Game."

2.32 Provide role-playing opportunity.

2.33 Use interview technique related to job visitations.

OUTCOMES:

2.31 Increased knowledge of relationships between psychological, sociological, and economic aspects of careers (Wellman, 1971).

2.32 Increased knowledge of relationships between occupation and career decisions.

2.33 Ability to demonstrate employment trends in two occupational clusters due to supply and demand.

2.34 *

EVALUATION:

2.31 Establish pre- and post-test differences.

2.32 Use of criteria set by teacher listing relationship of psychological, sociological, and economic factors to careers.

2.33 *

LEVEL 10-12

DEVELOPMENTAL OBJECTIVE:

2.4 To develop awareness of personal career alternatives.

BEHAVIORAL OBJECTIVES:

2.41 To identify a broad range of career options as personal alternatives to set tentative goals in one or more occupational areas (Wellman, 1971).

2.42 To recognize the need to be flexible to meet job characteristics (A K-12 Guide/Wisconsin).

2.43 To list areas of possible compromise when relating career options to personal needs and goals.

2.44 *

PROCESS OBJECTIVES AND STRATEGIES:

2.41 Provide experience with Holland's theory/classification (Wellman, 1971).

2.42 Provide participation in field trips and job interviews.

2.43 Provide work experience when possible related to occupational goals.

2.44 *

OUTCOMES:

2.41 Ability to express commitment to career goals (Wellman, 1971).

2.42 Ability to write an outline of sequential goals.

2.43 Ability to write an outline of career alternatives in rank order.

2.44 *

EVALUATION:

2.41 Establish criteria standard related to number of occupational cluster alternatives.

2.42 Compare individual with teacher/counselor estimations of reality.

2.43 *

3.0 GOAL: CAREER PLANNING. For individuals to develop planning skills in relationship to career, education, and personal preparation. The individual will become aware of the relationships of career, education, and personal style and how this interaction affects career planning.

LEVEL K-3

DEVELOPMENTAL OBJECTIVE:

3.1 To be aware of the process of planning (Gysbers and Moore, 1971).

BEHAVIORAL OBJECTIVES:

3.11 To demonstrate an understanding of the usefulness of planning.

3.12 To identify situations requiring decisions.

3.13 To identify situations resulting in a change of decision.

3.14 *

PROCESS OBJECTIVES AND STRATEGIES:

3.11 Have individual plan own appropriate school dress.

3.12 Have individual participate in a class decision.

3.13 Have individual describe verbally why he/she changed a decision.

3.14 *

OUTCOMES:

3.11 Ability to identify from a list of activities those requiring planning (Gysbers and Moore, 1971).

3.12 Ability to describe how the class makes a decision.

3.13 Ability to list reasons why a decision might be changed.

3.14 *

EVALUATION:

3.11 Establish criteria percentile standard.

3.12 Have individual list two events which led class to a decision.

3.13 Have individual describe verbally why he/she has changed a decision.

3.14 *

OUTCOMES:

3.11 Ability to identify from a list of activities those requiring planning (Gysbers and Moore, 1971).

3.12 Ability to describe how the class makes a decision.

3.13 Ability to list reasons why a decision might be changed.

3.14 *

EVALUATION:

3.11 Establish criteria percentile standard.

3.12 Have individual list two events which led the class to a decision.

3.13 Have individual list two reasons why a decision might be changed (teacher criteria for performance).

LEVEL 4-6

DEVELOPMENTAL OBJECTIVE:

3.2 To understand responsibility for planning career.

BEHAVIORAL OBJECTIVES:

3.21 To evaluate environmental influence upon one's planning.

3.22 To evaluate one's characteristics in relation to planning.

3.23 To identify how past decisions have led to present decisions.

3.24 *

PROCESS OBJECTIVES AND STRATEGIES:

3.21 Have individual discuss situations that have influenced decisions; i.e., teachers, parents, money.

3.22 Have individual discuss personal characteristics that relate to decisions she/he has made.

3.23 Have individual discuss consequence of past decisions.

3.24 *

OUTCOMES:

3.21 Ability to participate effectively in simulation employment office (Gysbers and Moore, 1971).

3.22 Ability to discuss with the counselor personal characteristics and how they relate to decisions.

3.23 Ability to list consequences of past decisions.

3.24 *

EVALUATION:

3.21 Establish pre- and posttest differences.

3.22 Use performance level criterion set by teacher.

3.23 *

LEVEL 7-9

DEVELOPMENTAL OBJECTIVE:

3.3 To understand the relationship between academic choices and career planning.

BEHAVIORAL OBJECTIVES:

3.31 To choose a curriculum plan related to tentative career choice.

3.32 To describe how self-interests relate to career choice.

3.33 To identify possible future changes in chosen career and/or curriculum.

3.34 *

PROCESS OBJECTIVES AND STRATEGIES:

3.31 Have individual interview staff members.

3.32 Have individual participate in small group discussion.

3.33 Have individual conduct field trip interviews, discussing the changes present employees have made.

3.34 *

OUTCOMES:

3.31 Ability to choose elective courses through mass registration.

3.32 Ability to state which courses most directly relate to a preferred career.

3.33 Ability to list possible alternative careers in relation to a chosen curriculum.



3.34 *

EVALUATION:

3.31 Compare student and teacher/counselor estimation of reality.

3.32 Use of teacher criterion of ability to list alternatives within the curriculum.

3.33 *

LEVEL 10-12

DEVELOPMENTAL OBJECTIVE:

3.4 To identify alternatives in career planning (Gysbers and Moore, 1971).

BEHAVIORAL OBJECTIVES:

3.41 To evaluate alternative careers.

3.42 To choose a hypothetical alternative goal and reformulate plans.

3.43 To identify situations in the community that could effect career planning.

3.44 *

PROCESS OBJECTIVES AND STRATEGIES:

3.41 Provide job visitations.

3.42 Have individual research community information and situations affecting his/her career.

3.43 Provide job interviews in chosen career cluster.

3.44 *

OUTCOMES:

3.41 Ability to evaluate and rank order five alternative clusters related to own potential.

3.42 Increased knowledge of community's economy and other career related variables.

3.43 Ability to complete three interviews in the community.

3.44 *

EVALUATION:

3.41 Determine if the individual's listing of career clusters and potential

is congruent with the perception of the counselor/teacher.

3.42 Have individual evaluate own interviews as successful or nonsuccessful in terms of career goals.

3.43 *

4.0 GOAL: CAREER PREPARATION. To develop understanding of the relationships between academic work and career preparation and to progress developmentally in personal career preparation.

LEVEL K-3

DEVELOPMENTAL OBJECTIVE:

4.1 To develop awareness of academic skills.

BEHAVIORAL OBJECTIVES:

4.11 To identify academic skills needed in the world of work (Wellman, 1971).

4.12 To identify communication skills needed in work (Gysbers and Moore, 1971).

4.13 To identify psychomotor skills needed in work (A K-12 Guide/Wisconsin, 1971).

4.14 *

PROCESS OBJECTIVES AND STRATEGIES:

4.11 Have individual discuss educational level of parents.

4.12 Consult C.I.S. (Career Information System) (CCEM, 1971).

4.13 Have individual discuss psychomotor skills needed in school-related work or parents' work.

4.14 *

OUTCOMES:

4.11 Ability to list three valid relationships between various disciplines and occupations.

4.12 Ability to identify workers who rely on language in their occupation.

4.13 Ability to list skills needed to do school assignments.

4.14 *

EVALUATION:

4.11 Have individual participate in discussions.

4.12 Have individual communicate through verbalizing thoughts.

4.13 Have individual name and demonstrate a skill related to school work.

LEVEL 4-6

DEVELOPMENTAL OBJECTIVE:

4.2 To be aware of good and bad employment characteristics.

BEHAVIORAL OBJECTIVES:

4.21 Identify employee characteristics taken into consideration by employers (Wellman, 1971).

4.22 Identify employee characteristics considered positive.

4.23 Identify employee characteristics considered negative.

4.24 *

PROCESS OBJECTIVES AND STRATEGIES:

4.21 Provide job visitation opportunity.

4.22 Schedule Career Day source speakers.

4.23 Have individual choose an occupation and interview a member.

4.24 *

OUTCOMES:

4.21 Ability to name employee characteristics both favorable and unfavorable.

4.22 Ability to list positive and negative characteristics for job interview choice.

4.23 Ability to relate three school characteristics to three employment characteristics.

4.24 *

EVALUATION:

Establish minimum performance level criterion as follows:

4.21 Have individual list five general employee characteristics both favorable and unfavorable.

4.22 Have individual relate three school characteristics to three employee characteristics for at least two cluster areas.

4.23 Have individual list five specific employee characteristics for job interview choice.

4.24 *

LEVEL 7-9

DEVELOPMENTAL OBJECTIVE:

4.3 To be aware of placement procedures both educational and occupational.

BEHAVIORAL OBJECTIVES:

4.31 To describe how and where to seek general employment.

4.32 To describe the secondary curricula choices.

4.33 To describe the educational level needed for various occupations.

4.34 *

PROCESS OBJECTIVES AND STRATEGIES:

4.31 Have individual take part in simulation learning and role playing of job/school interviews.

4.32 Provide presentation of educational levels.

4.33 Have the individual give written and oral presentations of various occupations and required educational levels.

4.34 *

OUTCOMES:

4.31 Ability to complete a written application for employment.

4.32 Ability to complete a written schedule for a curricular option (Wellman, 1971).

4.33 Ability to list three curricular options.

4.34 *

EVALUATION:

4.31 Have individual hand in successfully completed employment application.

4.32 Have individual hand in successfully completed curricular schedule.

4.33 Have individual recite orally an occupation appropriate for each secondary curricula option.

4.34 *

LEVEL 10-12

DEVELOPMENTAL OBJECTIVE:

4.4 To be aware of job and educational alternative potential placement.

BEHAVIORAL OBJECTIVES:

4.41 To demonstrate skills needed for employment upon completion of vocational curriculum (Wellman, 1971).

4.42 To demonstrate skills needed for college placement upon completion of pre-college curriculum.

4.43 To demonstrate skills needed for further occupational education upon completion of a vocational technical curriculum.

4.44 *

PROCESS OBJECTIVES AND STRATEGIES:

4.41 Provide psychomotor training and experience in voc-tech aspects.

4.42 Provide specific cognitive training in academic disciplines.

4.43 Provide guidance counselor presentation of job and educational alternatives.

4.44 *

OUTCOMES:

4.41 Ability to attain competency rating by instructor or employment placement.

4.42 Ability to successfully complete Washington Pre-College Test.

4.43 Graduation with 2.5 GPA or above.

4.44 *

EVALUATION:

4.41 Criteria standards of voc-tech competencies are established.

4.42 College admission standards are established.

4.43 *

5.0 GOAL: WORK AND LEISURE. For individuals to recognize that personal satisfaction in a career is related to involvement in leisure time activities (Gysbers and Moore, 1971).

LEVEL K-3

DEVELOPMENTAL OBJECTIVE:

5.1 To understand the function of leisure time and life style (Gysbers and Moore, 1971).

BEHAVIORAL OBJECTIVES:

5.11 To demonstrate awareness of the difference between work and leisure (Gysbers and Moore, 1971).

5.12 To demonstrate awareness of times during the school day considered leisure.

5.13 To demonstrate awareness of parent's way of using leisure time.

5.14 *

PROCESS OBJECTIVES AND STRATEGIES:

5.11 Have individual experience listening and observing presented leisure and work activities.

5.12 Have individual consult C.I.S. (Career Information System) (CCEM, 1971).

5.13 Have individual participate in a discussion of fun activities such as games, sports, and hobbies.

5.14 *

OUTCOMES:

5.11 Ability to designate from a list of activities the nature of work and leisure.

5.12 Ability to present orally a definition of leisure.

5.13 Ability to recite orally a definition of life style.

5.14 *

EVALUATION:

5.11 Have individual give an example of a school or home work activity.

5.12 Have individual give an example of a school or home leisure activity.

5.13 *

LEVEL 4-6

DEVELOPMENTAL OBJECTIVE:

5.2 To understand the function of leisure time and life style.

BEHAVIORAL OBJECTIVES:

5.21 To understand the importance of leisure time enjoyment (Gysbers and Moore, 1971).

5.22 To understand the differences among various life styles.

5.23 To understand that leisure means different things to different people.

5.24 To understand ways that occupations influence life style.

PROCESS OBJECTIVES AND STRATEGIES:

5.21 Have individual experience a leisure time field trip, i.e., camp out.

5.22 Have individual share and discuss various individual leisure interests.

5.23 Schedule a resource speaker from the city recreation program presentation.

5.24 *

OUTCOMES:

5.21 Ability to list a number of leisure interests and explain reasons for enjoyment.

5.22 Ability to list why leisure means different things to different people.

5.23 Ability to list why occupations influence life style.

5.24 *

EVALUATION:

5.21 Have individual successfully accomplish choice of one specific occupation

and list three life style influences.

5.22 Have individual successfully accomplish choice of one leisure activity and explain three reasons for enjoyment.

5.23 *

LEVEL 7-9

DEVELOPMENTAL OBJECTIVE:

5.3 To understand the function of leisure time and life style.

BEHAVIORAL OBJECTIVES:

5.31 To understand that career choice affects the amount and type of leisure time (Gysbers and Moore, 1971).

5.32 To understand the relationship between salary and type of life style (Gysbers and Moore, 1971).

5.33 To understand the various methods of classifying occupations (Gysbers and Moore, 1971).

5.34 *

PROCESS OBJECTIVES AND STRATEGIES:

5.31 Have individual explore work experiences and interview.

5.32 Have individual read assignments from Occupational Handbook.

5.33 Provide guidance presentation of attitudes/interests and discussion.

5.34 *

OUTCOMES:

5.31 Ability to identify a number of careers as to the amount of time and responsibility.

5.32 Ability to list five valid ways occupational clusters are related to life style.

5.33 Ability to list occupational clusters.

5.34 *

EVALUATION:

5.31 Have individual establish minimum criteria standard at the 75% level.

5.32 Have individual lis five career clusters.

5.33 Have individual list five ways career clusters are related to life style.

5.34 *

LEVEL 10-12

DEVELOPMENTAL OBJECTIVE:

5.4 To understand the function of leisure time and life style.

BEHAVIORAL OBJECTIVES:

5.41 To make tentative career plans with individual application of one's own values concerning leisure time. (Gysbers and Moore, 1971).

5.42 To describe preferred life style.

5.43 To identify values and needs met by leisure activities.

5.44 *

PROCESS OBJECTIVES AND STRATEGIES:

5.41 Have individual study occupational time and responsibility obligations.

5.42 Provide group discussion of values, needs, and leisure.

5.43 Schedule counselor presentation of personality need and value systems.

5.44 *

OUTCOMES:

5.41 Ability to match and contrast various occupational obligations in relation to own values and formulate a tentative plan of action.

5.42 Ability to match life styles with probable value and needs.

5.43 Ability to rank order a list of terminal values.

5.44 *

EVALUATION:

5.41 Provide discussion of congruence between individual and teacher/counselor perceptions of aspired occupational choice on a satisfactory-unsatisfactory basis.

5.42 Provide discussion of congruence between individual and teacher/counselor perceptions of aspired occupational choice on a satisfactory-unsatisfactory basis.

5.43 *

References:

A K-12 Guide for Integrating Career Development into Local Curriculum. Department of Public Instruction, State of Wisconsin, Madison, WI, 1971.

Comprehensive Career Education Model. Columbus, OH: Center for Vocational and Technical Education, 1971.

"Elements of a Quality Career Guidance, Counseling, and Placement Program." Coordinating Council for Occupational Education, Olympia, WA, 1975.

Gysbers and Moore. Career Conscious Individual. Columbia, MO: University of Missouri, 1971.

Wellman, Frank E. Systems Model for Guidance Program Development and Evaluation. Paper presented at Career Development Guidance, Counseling and Placement Project, National Training Conference, St. Louis, MO, 1971.

Learning Activity 4 -b

Select an area of vocational education--a class, project or program--and devise a list of 20 criteria, 10 for each learner activity, and 10 for program outcomes, which could serve as a basis for evaluation of a project, program or class.

References:

Superintendent of Public Instruction. A Manual for Project Applicants and Grants. Title III, Elementary and Secondary Education Act in Washington State. Olympia, WA: Superintendent of Public Instruction, 1971.

Wasdyke, R. G., and Murphy, R. R. "Form for Evaluating Objectives in the Occupational Area." Occupational Performance Objectives. Princeton, NJ: Educational Testing Service, 1974.

CRITERIA FOR EVALUATING CURRICULUM GUIDE

Curriculum Guide Evaluated _____

| CRITERIA | CONTAINED IN GUIDE | | |
|---|---|---|---|
| | Yes | No/Not included | Needs improvement |
| **I. PROGRAM GOALS:** | | | |
| Consistent with needs (student and employment) | | | |
| Behavioral objectives designed to meet goals | | | |
| Consistent with level and abilities of students | | | |
| Relevant attitudes, knowledge, and skills to jobs | | | |
| Feasible within time and budget | | | |
| Statements clear and understandable to students, teachers, administrators | | | |
| Establishes learning directions and emphases | | | |
| Consistent with stated philosophy | | | |
| Consistent with available resources | | | |
| Describes terminal behavior | | | |
| **II. CONTENT (Curriculum):** | | | |
| Clearly relates to course goals | | | |
| Valid up-to-date materials | | | |
| Includes general principles as opposed to facts | | | |
| **III. LEARNING ACTIVITIES:** | | | |
| Safe with adequate supervision | | | |
| Effective for meeting objectives | | | |
| Variety for student interest | | | |
| Balance in modes of learning | | | |
| Flexible to meet student needs | | | |
| Consistent with "real world" activities | | | |
| Organized in logical progression | | | |
| Flexible in school setting | | | |
| **IV. LEARNING MATERIALS:** | | | |
| Available in sufficient quantity | | | |
| Instrumental in achieving behavioral objectives | | | |
| Meets capabilities of students | | | |
| Quality consistent with price | | | |
| Suitable for various teaching methods | | | |
| References and resources included | | | |
| **V. EVALUATION:** | | | |
| Provision made for OJT follow-up | | | |
| Type compatible with behavioral objectives | | | |
| Criterion referenced and norm referenced testing | | | |

| CRITERIA | CONTAINED IN GUIDE | | |
|---|---|---|---|
| | Yes | No/Not included | Needs improvement |
| Provides for student feedback | | | |
| Includes pre-testing and initial screening | | | |
| Distinguishes various levels of knowledge | | | |
| Provides for program evaluation and revision | | | |
| Evaluation technique contributes to learning | | | |

NAME OF PROJECT PROPOSAL:

REVIEWER _____ APPLICANT _____

I. Brief abstract or description of project: write concisely in a few sentences highlighting the central objectives, the target population, procedures and activities, and evaluation. Do not attempt to detail each part of the project, but capture in abstract form the central features.

| II. Needs | Low 1 | 2 | 3 | 4 | High 5 |
|---|---|---|---|---|---|
| Degree to which: | | | | | |
| 1. needs are clearly stated | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. need statements are specific enough to lend real direction to project | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. need statements make reference to behavior of learner | ( ) | ( ) | ( ) | ( ) | ( ) |

COMMENTS:

| III. Objectives | | | | | |
|---|---|---|---|---|---|
| Degree to which: | | | | | |
| 1. objectives are functionally related to stated needs | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. objectives are assessable at relatively frequent intervals | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. objectives include description of: | | | | | |
| a. performance being observed | ( ) | ( ) | ( ) | ( ) | ( ) |
| b. conditions under which behavior is to occur | ( ) | ( ) | ( ) | ( ) | ( ) |
| c. criterion of acceptable performance including time dimension, accuracy, and proficiency level | ( ) | ( ) | ( ) | ( ) | ( ) |

| | Low 1 | 2 | 3 | 4 | High 5 |
|---|---|---|---|---|---|
| 4. objectives indicate changes in student performance | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. staff objectives are specified | ( ) | ( ) | ( ) | ( ) | ( ) |

COMMENTS:

IV. Procedures and Activities

Degree to which:

| | | | | | |
|---|---|---|---|---|---|
| 1. logical progression of events is evident | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. the responsibility for procedural steps is evident | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. procedures are clearly enough described so that an outside reader could implement those procedures in very similar form | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. there are specific procedures for each objective | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. procedures are described to monitor staff activities and responsibilities | ( ) | ( ) | ( ) | ( ) | ( ) |
| 6. procedures lend themselves to continuous evaluation | ( ) | ( ) | ( ) | ( ) | ( ) |
| 7. procedures indicate how evaluation is going to be incorporated in on-going program operation | ( ) | ( ) | ( ) | ( ) | ( ) |
| 8. procedures are capable of being exported and implemented in another district | ( ) | ( ) | ( ) | ( ) | ( ) |
| 9. the sequence of events is delineated (timelines) | ( ) | ( ) | ( ) | ( ) | ( ) |
| 10. evidence is given that facilities, materials, and resources are available to accomplish objectives | ( ) | ( ) | ( ) | ( ) | ( ) |
| 11. proposed activities are educationally sound and logically related to objectives | ( ) | ( ) | ( ) | ( ) | ( ) |

| | Low 1 | 2 | 3 | 4 | High 5 |
|---|---|---|---|---|---|
| 12. activities are innovative and seem likely to effectively motivate student learning | ( ) | ( ) | ( ) | ( ) | ( ) |

COMMENTS:

V. Evaluation

Degree to which:

| | | | | | |
|---|---|---|---|---|---|
| 1. evaluation design is clearly described | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. evaluation data are derived from valid and reliable instruments and techniques | ( ) | ( ) | ( ) | ( ) | ( ) |
| 3. evaluation incorporates measures of each specified objective | ( ) | ( ) | ( ) | ( ) | ( ) |
| 4. evaluation data measure progress toward objectives, not just whether objectives were or were not achieved | ( ) | ( ) | ( ) | ( ) | ( ) |
| 5. provisions are made for modification of procedures based on feedback from on-going evaluation | ( ) | ( ) | ( ) | ( ) | ( ) |
| 6. evaluation process will be understandable to appropriate audiences | ( ) | ( ) | ( ) | ( ) | ( ) |

COMMENTS:

VI. Coordination and management of learning activities:

| | | | | | |
|---|---|---|---|---|---|
| 1. staff and management responsibilities are clearly identified | ( ) | ( ) | ( ) | ( ) | ( ) |
| 2. coordination with total curriculum is evident - that is, there seems to be appropriate linkage with total school program | ( ) | ( ) | ( ) | ( ) | ( ) |

COMMENTS:

VII. Strengths and weaknesses of project:

Strengths

Weaknesses

Your comment on educational significance of project:

VIII. Recommendations:

If you were reviewing the proposal for a funding agency or a school district would you:

recommend project
- ☐ high priority level
- ☐ medium priority level
- ☐ low priority level

not recommend project ☐

recommend with the following revisions: ☐

_____

_____

_____

_____

# FORM FOR EVALUATING OBJECTIVES IN THE OCCUPATIONAL AREA

| CATALOG AREA BY SOURCE | PERFORMANCE OBJECTIVES | | | | | | | JOB LEVEL | | | | | GRADE LEVEL | | | | METHOD OF VALIDATION | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Task Statement | Enabling Objective E | Terminal Objective T | Goals G | Performance Statement 1 | Conditions Format | Extent | Pre-Entry | Entry | Apprenticeship | Journeyman | Technical | Elementary | Secondary | Post-Secondary | Non-graded | TASK ANALYSIS | TEACHER DEVELOPED | JUDGMENTAL PROCESS |
| | | | | | | | | | | | | | | | | | | | |
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PERFORMANCE OBJECTIVE 5 ●●●●●

Specify the sources of error and evaluate the criteria used in measures which determine student outcomes in vocational programs.

In addition to paper and pencil testing and informal observation, systematic observation of both the learning process and products provides useful evaluation data. Such observations can be those of a teacher or supervisor, or learners themselves may observe and rate the product of their efforts.

Numerous observational approaches have been suggested ranging from informal instructional observation to highly structured and sophisticated systems, which require considerable training to use.

For most teachers and supervisors, fairly reliable data may be obtained if a few general principles are observed:

1. Observations should be made in representative situations.
2. Careful attention must be paid to definition of behaviors, details of process, or specific criteria when evaluating a product.
3. The process or observation should not interfere with the learning process or behavior being observed so as to render the observation atypical.

The following cautions or obstacles to effective use of observation should also be considered:

1. High degrees of reliability or consistency are difficult to obtain even when the observer is highly trained, that is, observation contains a high degree of subjectivity. The best antidote is to have a careful knowledge of what to observe and to define the characteristics as specifically as possible. General observations of an unspecified nature are usually worthless.

2. Many characteristics, particularly behavioral characteristics as usually labeled, are ambiguous and produce a great variation in the judgments made about them. Such qualities as leadership, self-confidence, good citizenship, etc., serve as examples. In order to produce more consistent interpretations of such qualities, specific observable behavioral characteristics associated with more general labels should be identified. For example, "What specific types of behavior do students demonstrate when they are showing leadership qualities?" or "How do students behave when they are being good citizens?"

3. The error of leniency is common among raters and must be guarded against. Research has shown that observers tend to rate high those persons with whom they are well acquainted or ego-involved. In addition to the clear definition of that which is to be observed, it is advised that any observer should ask other knowledgeable persons to check on their observations periodically to detect bias of any sort.

4. Likewise the halo effect or error of generalization is common in making observations. This means that persons who formulate a set or stance towards the quality of that being observed or rated, tend to rate all parts of the process, product, or behavior in accord with that general set. Training in observation will help observers become more discriminating.

Selected References-Observation:

Gronlund, Arnold J. "Construction and Use of Observational Tools." Measurement and Evaluation of Learning. Dubuque, IA: Wm. C. Brown, 1967. Chapter 6

Michaels and Karnes. Measuring Educational Achievement. New York: McGraw Hill, 1950. Chapter 13.

Penbrink, Terry D. Evaluation: A Practical Guide for Teachers. New York: McGraw Hill, 1974. Chapter 6.

Test Development Staff. Instrument Guide. Princeton, NJ: Educational Testing Service, 1971.

Instructional Objective 5.1

The learner will be able to construct observation sheets and test items, and apply the appropriate criteria for the evaluation of each.

Learning Activity 5.1-a

1. Create an observational rating scale or checklist in a vocational area of your choice which conforms to the following specifications:
   a. is in accord with prior knowledge of what to observe,
   b. is in accord with specific objectives of learning activity, or purposes of observation,
   c. establishes clear definition of characteristics to be observed,
   d. includes 3-5 levels of proficiency or gradations of characteristics,
   e. provides for summary statements and understandable profile,
   f. has clear directions and is free from offensive qualities,
   g. includes time lines, frequency, and context.
2. Select two or three examples of observation sheets and critique them for content, appropriateness to program objectives, proficiency levels, and validity.
3. Select two or three sheets and evaluate them using test construction criteria.

Reference:

Peatman, J.G. "Definition and Sources of Error in Sampling." Descriptive and Sampling Statistics. New York: Harper, 1947.

Test constructors and evaluators often refer to tables which contain a systematic listing of objectives, reflecting the relative emphasis on each as a table of specifications. Such tables become the blueprint for the measurement and evaluation instruments. They may be simple or complex, depending on the number of objectives contained in a unit. A few examples are provided. The importance of the relationships between testing and program objective is essential if valid evaluation is to occur. The following represents criteria for relating tests to objectives.

1. Performance Objectives - statements which say very precisely what behavioral changes in the learner are expected to occur as a result of the instruction given, must be written and the particular measures developed to assess those behaviors.

2. Each learner performance objective must include the following:

| | |
|---|---|
| A - (audience) | The learners have been described. |
| *B - (behavior) | The behavior to be exhibited to the product to be developed is described. |
| *C - (conditions) | The conditions under which the behavior is to occur or the product is to be developed are described. |
| D - (degree) | The criteria for determining the acceptability of the behavior or product are described. |
| E - (evaluation) | The evaluation processes are described. |

*As defined in the Module, "Developing Curriculum: Goals, Objectives, and Instructional Plans," B, C, and D are the essential elements of a performance objective.

Use of Criteria for Analyzing Objectives

| CRITERIA | OBJECTIVE A | OBJECTIVE B | OBJECTIVE C | OBJECTIVE D |
|---|---|---|---|---|
| Who | Student (pupil, learner) | Pupil | Learner | Learner |
| What behavior | will build | will bake | will chair - committee to develop | will type |
| What result, product or performance | a cedar chest | a cake | a student conduct code | a letter |
| Under what conditions | during school day in shop using tools and materials | at home during weekend | within a one month period | in a 5-minute timed test |
| What standards | Chest must sell at school contracted price to furniture store | Cake must be judged acceptable in texture, taste appearance by majority of classmates | which is ratified by majority vote of student body | at an average speed of 35 words per minute with a minimum of 5 errors |

A wide variety of standardized tests are available in the basic skill areas and a few other standard techniques in vocational education. These will be listed and critiqued in the various editions of Buros, Mental Measurement Yearbook.

References - Testing:

Bloom, B.S.; Hastings, J.T.; and Madans, G.F. Handbook on Formative and Summative Evaluation of Student Learning. New York: McGraw Hill, 1971.

Buros, Oscar K. Mental Measurement Yearbook. Highland Parks, NJ: Gyphron Press, 1970.

Green, John A. Teacher-made Tests, 2nd ed. New York: Harper and Row, 1975.

Mager, Robert. Preparing Instructional Objectives. Belmont, CA: Fearon Publishers, 1975.

Payne, David A. The Assessment of Learning: Cognitive and Affective. Lexington, MA: D.C. Heath and Company, 1974. Parts II and III.

## Progress Chart - Manipulative Operation

| Grade<br>Course | Period | Instructor | | |
|---|---|---|---|---|
| Code * | | student's name | | |
| 1. Excellent<br>2. Good<br>3. Fair<br>4. Poor | 1. Unsatisfactory<br>2. Average<br>3. Excellent | | | |
| 1. Perform a blood pressure reading | | | | |
| 2. Operate oxy-acetylene welding equipment | | | | |
| 3. Cut a sheet of metal with snips | | | | |

Proficiency levels

| | |
|---|---|
| Excellent 1. | Followed prescribed procedure in detail - accurate and correct. Observed safety procedures. Used all tools and equipment correctly. Completed operation in minimum length of time. After initial instruction, required no assistance. |
| Good 2. | Followed prescribed procedure. Work of high quality. Observed safety precautions. Completed operation in average time. Required some help from instructor. |
| Average-Fair 3. | Had difficulty in following correct procedure. Observed only obvious safety precautions. Work of poor quality. Required maximum time. Required much help. |
| Poor/Unsatisfactory 4. | Was unable to follow correct procedure. Failed to complete work in time. Failed to use safety precaution. Misused tools and equipment. Did not respond to help given. |

* The codes represent two alternative methods for rating; either may be used.

Progress Chart - Jobs/Assignments

| Grade<br>Course | Period | | | | |
|---|---|---|---|---|---|
| Code<br>X = Complete<br>O = Incomplete | student's name | | | | |
| 1. Butt Weld | | | | | |
| 2. T Weld | | | | | |
| 3. Tilet T. Weld | | | | | |

Proficiency level

X = Weld free from slog pockets, uniform width, withstands 1000 PSI pressure.

O = any of the following: Slog pockets, non-uniform width, fails at 1000 PSI pressure.

EMPLOYEE EVALUATION FORM

Name:_____ Date:_____

Department:_____ Job Title:_____

PURPOSES OF THIS EMPLOYEE EVALUATION:

To take a personal inventory, to pinpoint weaknesses and strengths, and to outline a l agree upon a practical improvement program. Periodically conducted, these evaluations will provide a history of development and progress.

INSTRUCTIONS:

Listed below are a number of traits, abilities, and characteristics that are important for success in business. On each rating scale, place an "X" over the descriptive phrase which most nearly describes the person being rated. (If this form is being used for self-evaluation, you will be describing yourself.)

Carefully evaluate each of the qualities separately.

Two common mistakes in rating are: (1) a tendency to rate nearly everyone as "average" on every trait instead of being more critical in judgment. The rater should use the ends of the scale as well as the middle, and (2) the "halo effect;" i.e., a tendency to rate the same individual "excellent" on every trait or "poor" on every trait based on the overall picture one has of the person being rated. However, each person has strong points and weak points and these should be indicated on the rating scale.

ACCURACY is the correctness of work duties performed.

| | | | | |
|---|---|---|---|---|
| Makes frequent errors. | Careless; makes recurrent errors | Usually accurate makes only average number of mistakes | Requires little supervision; is exact and precise most of time | Requires absolute minimum of supervision; is almost always accurate |

Daniels, William E. Diversified Occupations. Olympia, WA: Coordinating Council for Occupational Education, 1973.

STUDENT W K EXPERIENCE

FORM FOR

EMPLOYER'S ESTIMATE OF COOPERATIVE TRAINEE

Cooperative Trainee _____ Date _____

Company _____ Occupation _____

Supervisor: This rating sheet is used by the school work coordinator for counseling purposes. Please check the column which best describes the student trainee.

| CHARACTERISTICS | EXCELLENT | GOOD | AVERAGE | FAIR | POOR |
|---|---|---|---|---|---|
| Quality of work | | | | | |
| Attitude toward job | | | | | |
| Attitude toward fellow workers | | | | | |
| Dependability (on job assigned) | | | | | |
| On time and at work regularly | | | | | |
| Initiative (find work to do) | | | | | |
| Personal appearance | | | | | |

COMPARED TO A NEW YOUNG EMPLOYEE, WHAT GRADE WOULD YOU GIVE? _____

Please feel free to list additional comments regarding the progress of the student below or on the back of this form.

_____

Employer's Signature

ALERTNESS is the ability to grasp instructions, to meet changing conditions and to solve novel or problem situations.

| | | | | |
|---|---|---|---|---|
| Slow to "catch on" | Requires more than average instructions and explanations | Grasps instructions with average ability | Usually quick to understand and learn | Exceptionally keen and alert |

CREATIVITY is talent for having new ideas, for finding new and better ways of doing things, and for being imaginative.

| | | | | |
|---|---|---|---|---|
| Rarely has a new idea; is unimaginative | Occasionally comes up with new idea | Has average imagination; has reasonable number of new ideas | Frequently suggests new ways of doing things - is very imaginative | Continually seeks new and better ways of doing things; is extremely imaginative |

FRIENDLINESS is the sociability and warmth which an individual imparts in his attitude toward customers, other employees, supervisors, and the persons he may supervise.

| | | | | |
|---|---|---|---|---|
| Very distant and aloof | Approachable; friendly once known by others | Warm, friendly, sociable | Very sociable and out-going | Extremely sociable, excellent at establishing good will |

PERSONALITY is an individual's behavior characteristics or her personal suitability for the job.

| | | | | |
|---|---|---|---|---|
| Very untidy, poor taste in dress | Sometimes untidy and careless about personal appearance | Generally neat and clean; satisfactory personal appearance | Careful about personal appearance good taste in dress | Unusually well groomed; very neat; excellent taste in dress |

PHYSICAL FITNESS is the ability to work consistently and with only moderate fatigue. (consider physical alertness and energy)

| | | | | |
|---|---|---|---|---|
| Tires easily; is weak and frail | Frequently tires and is slow | Meets physical and energy job requirements | Energetic; seldom tires | Excellent health no fatigue |

ATTENDANCE is faithfulness in coming to work daily and conforming to work hours.

| | | | | |
|---|---|---|---|---|
| Often absent without good excuse and/or frequently reports for work late | Lax in attendance and/or reporting for work on time | Usually present and on time | Very prompt; regular in attendance | Always regular and prompt; volunteers for overtime when needed |

HOUSEKEEPING is the orderliness and cleanliness in which an individual keeps his/her work area.

| | | | | |
|---|---|---|---|---|
| Disorderly or untidy | Some tendency to be careless and untidy | Ordinarily keep work area fairly neat | Quite conscientious about neatness and cleanliness | Unusually neat, clean, and orderly |

DEPENDABILITY is the ability to do required jobs well with a minimum of supervision.

| | | | | |
|---|---|---|---|---|
| Requires close supervision, is unreliable | Sometimes requires prompting | Usually takes care of necessary tasks and completes with reasonable promptness | Requires little supervision; is reliable | Requires absolute minimum of supervision |

DRIVE is the desire to attain goals to achieve.

| | | | | |
|---|---|---|---|---|
| Has poorly defined goals and acts without purpose; puts forth practically no effort | Sets goals too low; puts forth little effort to achieve | Has average goals and usually puts forth effort to reach these | es hard; high desire to achieve | Sets high goals and strives incessantly to reach these |

JOB KNOWLEDGE is the information concerning work duties which an individual should know for a satisfactory job performance.

| | | | | |
|---|---|---|---|---|
| Poorly informed about work duties | Lacks knowledge of some phases of work | Moderately informed; can answer most common questions | Understands all phases of work | Has complete mastery of all phases of job. |

QUANTITY OF WORK is the amount of work an individual does in a work day.

| | | | | |
|---|---|---|---|---|
| Does not meet minimum requirements | Does just enough to get by | Volume of work is satisfactory | Very industrious; does more than is required | Superior work production record |

STABILITY is the ability to withstand pressure and to remain calm in crisis situation.

| | | | | |
|---|---|---|---|---|
| Goes to pieces under pressure is jumpy and nervous | Occasionally blows up under pressure; is easily irritated | Has average tolerance for crisis; usually remains calm | Tolerates most pressure; likes crisis more than the average person | Thrives under pressure; really enjoys solving crisis |

COURTESY is the polite attention an individual gives other people.

| | | | | |
|---|---|---|---|---|
| Blunt, discourteous; antagonistic | Sometimes tactless | Agreeable and pleasant | Always very polite and willing to help | Inspiring to others in being courteous and very pleasant |

OVERALL EVALUATION in comparison with other employees with the same length of service on this job.

| | | | | |
|---|---|---|---|---|
| Definitely unsatisfactory | Substandard but making progress | Doing on average job | Definitely above average | Outstanding |

COMMENTS

Major weak points are:

1. _____
2. _____
3. _____

and these can be strengthened by doing the following:

_____
_____
_____
_____
_____
_____

Major strong points are:

1. _____
2. _____
3. _____

and these can be used more effectively by doing the following:

_____
_____
_____
_____
_____
_____

Rated by _____
Name Title

(If not used as a self-evaluation, the employee should sign below)

A copy of this report has been given to me and has been discussed with me.

_____ _____
Employee's Signature Date

## Definitions and Sources of Error in Sampling

Adapted from: Peatman, J. G. "Definition and Sources of Error in Sampling." Descriptive and Sampling Statistics. New York: Harper, 1947.

1. Q. What is the difference between a census and a sample? What circumstances require the use of samples rather than of censuses?

   A. Census - observation of an entire population

   Sample - a designated part of the whole population

   Samples are required usually because it is impractical and sometimes impossible to include the entire population or universe for observation.

2. Q. Define a statistical population or universe and give several examples in research of (a) finite and (b) infinite universes; of (c) actual and (d) hypothetical universes.

   A. Statistical population or universe - the whole in statistical population; all cases in question. It defines all measurements of observations of one attribut or behavior of the phenomenon being studied.

   (a) finite - universe of public opinion and market research are usually taken as finite - idea that you can exhaust the entire population if necessary.

   (b) infinite - the fundamental calculus of probabilities has been developed for universes considered infinite in size--number of atoms, coins tossed, mathematics are infinite universes. All possible cases cannot be exhausted.

   (c) actual - a universe in which the behavior of all its members of instances are susceptible to observation or measurement. Obviously it must be finite. A behavior quality of adults at a particular time would be an example.

   (d) hypothetical universe - infinite, assumed, hypothesized; trait or characteristic of a race or group without regard to time limit would encompass both past and future and constitute a hypothetical universe.

3. Q. What kinds of errors necessarily are present in all sampling? Why?

A. Errors in all sampling include errors of observation and measurement and sampling errors. Errors of observation are inherent in all techniques due to human error and errors of sampling will occur because of the laws of probability or chance factors.

4. Q. What kinds of errors would be avoided in sampling? Why?

A. Errors to avoid are sampling errors and errors of measurement. Constant errors should be avoided. If they are not, the result will be an unrepresentative population of which the statistic is a part.

5. Q. Define a representative sample result. Are sample results derived from a cross section or stratification of a universe necessarily representative of the universe sampled? Why?

A. A representative sample unit is one in which the sample is a replica of the universe. Sample results derived from a cross section or stratification of a universe are not necessarily representative of the universe. The adequacy of the sample depends upon the character and size of the sample, plus the technique and procedure designed to obtain the desired results. The sample must be free from errors and bias to be a representative one.

6. Q. Define a biased sample and state the kinds of factors or circumstances that make for bias in sampling. Give several examples of these factors.

A. A biased sample is one which is non-representative of the universe from which it is drawn. It is not a replica of the universe of which it is a part. Following are several factors and circumstances which will make for bias:

a. bias resulting from non or late response

b. bias resulting from unrepresentative selection of population

c. bias resulting from unrepresentative data

d. bias from variability in answers

e. bias from errors peculiar to the kind of method employed

f. bias caused by faulty interview

g. bias due to reaction of respondent due to knowledge of sponsor

h. bias from imperfectly designed questionnaire

i. bias from processing errors in coding, tabulation and statistical techniques

j. bias from misinterpretation

7. Q. Define a random sample and a stratified-random sample. What do these two types of samples have essentially in common? What is the basic difference between them?

A. A random sample is one such that each instance or member of the universe being sampled has an equal chance of appearing in the sample; a stratified random sample consists of two or more random samples drawn from two or more subdivisions or strata of the universe, each stratum having been established with respect to one or more of the secondary control factors. These two types of samples have randomness in common but the purely random sample has no secondary control factors.

8. Q. Describe the techniques employed to insure the randomization of samples.

A. Techniques employed to insure randomization:

a. mechanical lottery - use of numbers or tables of numbers which have been tested for randomness.

b. alphabetizat - choose at random a sample from a group of names or some such that will compare to that of the universe.

c. inertia of large numbers will insure randomness providing that you have no constant error.

9. Q. Define a sampling unit and distinguish between initial or primary sampling units and the sampling unit per se.

A. The sampling unit of an investigation is the basic identity whose

characteristics or behavior is to be studied. An example would be the individual organism in psychology or biology. Sample units may be within a large geographical area, and the initial sampling made with respect to geographical subdivisions prior to the sampling of the individual units to be studied is referred to as the initial sampling unit.

10. Q. State the procedures by which a stratified random sample of a given size can yield a more adequate result than a random sample of the same size.

A. By stratification, in drawing a series of random samples, you can make the proportions of your sample correspond more closely to that of the universe. By stratifying a sample, you can often gain a more representative sample because certain of the characteristics are equated or controlled and thus require less size to eliminate chance error. It limits the area in which chance is required to operate.

11. Q. What kinds of research information can be derived from a stratified random sample that ordinarily are not obtainable from a purely random sample?

A. Single random samples cannot be expected to control chance and give a truly representative result in all cases. Stratifying samples are thus a device for increasing the accuracy or representativeness of the sample. By stratification you can gain information about the subuniverses which would not always be possible with pure randomness. This is many times the information that you desire. You can derive certain relationships between the control characteristics.

12. Q. What are internal controls in sampling and how are they utilized to make the results more adequate?

A. Internal controls are controls in addition to the stratification that researchers bring in, such as respondents' attitude, opinion, age, sex, etc. Then they can compare their sample with known characteristics to see if their cross section is typical. This makes results more adequate by eliminating typical cases or adjusting for them.

13. Q. On what fundamental assumptions and principles is the technique of a real sampling based? What is the essential difference between a real sampling and master sampling, and under what circumstances can the latter produce adequate results?

A. The fundamental assumption for a real sampling is that the universes are varied according to the particular purpose in mind - particular kinds of people, test subjects, etc.

a. In a real sampling, the civil units are divided into small area units exclusive of each other.

b. Each sample is associated with only one such unit.

c. Some of the relevant characteristics of this unit are known.

d. Hence a sample of areas can be used to establish stratified random samples for larger units.

The master sample technique attempts to achieve the advantages of small unit real sampling by means of a cross section of real samples for the universe to be studied. The master sample technique is valuable in eliminating biasing factors and will be very adequate if a comprehensive and random cross section is considered.

14. Q. Define the random point method of sampling and describe the difficulties inherent in it.

A. Random point consists in the random location of points on a map from which sampling units are chosen, with so many of the nearest households, farms, people, etc., being taken as the sample. Biasing factors are difficult to control in this type of sample.

15. Q. Define the stratified-quota method of sampling and discuss its advantages.

A. Stratified quota consists essentially in the stratification of the universe to be studied so that the people or characteristic in the sample will be in the same proportion as they are in the total population sampled.

Advantages of this include the fact that it is relatively inexpensive and that the sample results are quickly yielded.

16. Q. What is the primary control factor in all sampling techniques?

A. Primary control in all sampling is randomization.

17. Q. Distinguish between the representativeness and the precision of a sample result.

A. Representativeness refers to the trait or behavior being studied - it is the degree to which it is a replica of the universe - a matter of degree.

Precision of a sample result is evaluated in terms of the extent to which any measure derived from it agrees with the value of that measure for the universe sampled - precision refers to the results.

18. Q. Why is the character of the sample a more important consideration than its size?

A. Character denotes the stuff out of which the sample is made and if it is wrong it cannot be changed by increasing its size.

19. Q. Distinguish between random samples and accidental or ignorant samples.

A. Accidental or ignorant samples refer to those drawn in a haphazard or unplanned fashion - they represent no known universe. A random sample requires a great deal of study and systemization to insure that each member of the universe has an equal chance.

20. Q. In sampling, why is it necessary to study restricted universes? What is the difference between the sampling of a restricted universe and a partial investigation?

A. In many cases it makes little sense to study the universe in general - rather it must be restricted to answer your problem.

A series of observations or measurements drawn from the upper or lower part of a distribution derived from a part of a universe comprises a

partial investigation.

21. Q. Describe the nature of the sampling procedures used in the experimental method of equated groups. What is the essential difference between dependent and independent samples?

A. In experimental work the only way to determine whether or not a principle holds is to test it with many different kinds of people or circumstances. Sampling is thus utilized - equated groups serve the same purpose as stratifying the sample. Certain variables are controlled and others measured and, in many cases this must be done by a sampling technique. Independent samples are those chosen from different universes or sub-universes as well as from the same universe in the replication of an experiment. They are chosen in such a way that the selection of units in one sample is in no way affected by the selection of the units in the other.

Dependent samples are those matched to establish equated groups.

22. Q. What is the technical distinction between a parameter and a statistic? In what sense is it misleading to describe a parameter as a "true measure?"

A. Any measure of the distribution of a statistical universe or population is called a parameter.

Parameters are purely hypothetical measures because such values are always subject to errors that occur in the process of observation of measurement itself. The concept, true measure, implies an errorless parameter value. Therefore, only if the measure is errorless is the parameter, by definition, a true measure.

23. Q. What is the difference between a distribution of a sample and a sampling distribution?

A. The distribution of a given statistic is called a sampling distribution. Sampling distributions are composed of the values of a given type of

statistic derived from a series of random samples of uniform size from the same universe. Sampling distribution of a statistic is different from a distribution of the data of a sample, which is the ordinary distribution of the frequencies of a single sample.

24. Q. Under what circumstances is the tandard deviation of a distribution called the standard error?

A. The standard error of a statistic is the standard deviation of a sampling distribution of that measure. The standard deviation of a distribution is called the standard error in any statistic.

25. Q. What is the difference between sampling errors and errors of measurement?

A. Sampling error is technically used in statistics to denote the difference between the value of a parameter of a universe and the value of the statistic derived from a sample of that universe.

Errors of measurement are the errors that occur in connection with the procedure of observing, measuring, counting, etc.

26. Q. Contrast the research procedures used to control errors of measurement and sampling errors.

A. If the errors of measurement occur randomly, then a sampling distribution of them will tend to be distributed according to the normal curve of error. The larger the series of observations and measurement, the less the resulting effect of such errors on the sample and on most statistics derived from it. If they are distributed randomly they tend to balance each other and hence cancel out in their net effect on the value of such a statistic. Sampling distributions that are distributed normally are set according to the probable error which is equal to .6745 of its standard error and marks 50% of the distribution. Such a distribution will have an equal chance of being within or beyond these limits.

# PART II

## APPLICATION OF

## EVALUATION PROCESS

PERFORMANCE OBJECTIVE 6 ● ●●●●●

**Assemble, analyze, and interpret evaluation data, and present data in an understandable fashion to a variety of audiences.**

Evaluation Design

A first step in the evaluation process is to define the conditions and procedures arranged to gacher the evaluation data. This is usually called the "evaluation design." Such designs may be simple or complex depending on the degree of sophistication desired and the type of situation being evaluated. Essentially the purpose of the design is to assure systematic gathering of data upon which to base judgments and to allow for a reasonably complete data analysis.

The most common need for evaluation by the Vocational Educational Curriculum Specialist is evaluative data relating to the effectiveness of an instructional program. A simple evaluation design which specifies the gathering of data relating to specified objectives will usually suffice. It is most important however, if evaluation is to be valid, to know that expected behavior changes were acquired as a result of the instructional intervention and not some extraneous variable(s). Some things to keep in mind when developing evaluation designs are:

1. Type of measures
   a. Standardized tests
   b. CRT (Criteria Preferred Tests)
   c. Team made tests
   d. Teacher judgments
   e. Interviews
   f. Questionnaires
   g. Observations

2. Who designs or selects instruments?
   a. Specialists, test or...
   b. Tryout audiences

3. Who collects data?
   a. Curriculum or test specialists
   b. Project director or evaluator
   c. Classroom teachers

4. When is data collected?
   a. Before instruction
   b. After instruction
   c. Before and after instruction
   d. At specific times during instruction
   e. Randomly during instruction

5. Who interprets data?
   a. Administrator
   b. Curriculum Specialist
   c. Faculty
   d. Tryout audiences
   e. Evaluator, etc.

6. Types of interpretation
   a. Statistical
   b. Educational significance
   c. Objective and subjective
   d. Descriptive
   e. Graphic

A rather concise summary of evaluation and experimental designs is provided by Dr. Jim Aven, Division of Supplementary Centers and Services of the U.S. Office of Education. For the students wishing to further their expertise in evaluation and experimental design, Dr. Aven's Evaluation and Experimental Design is a suggested reference.

Experimental Designs:

Key: Requirements necessary for each design.

R = Random Selection
X = Independent Variables
O = Dependent Variable or Test Instrument - observation

Example: A case study requires both an (X) independent variable and a (O) dependent variable or test instrument observation.

1. A case study

   X O

2. A pretest and posttest design

   X O

3. A pretest and posttest design with a control group

   X O X O

   R O O

4. Posttest only with a control group

   R X O

   R O

Quasi-Experimental designs

5. Static group design

X O

O

6. Nonequivalent control group design

0 X 0

0 0

7. Time series design

0 0 0 X 0 0 0

8. Counterbalance design

0 X1 0 X2 X3 0

0 X2 0 X3 0 X1 0

0 X3 0 X1 0 X2 0

0 0

0

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Stenner, A. Jackson and Webster, William J. Educational Program Audit Handbook. Arlington, VA: The Institute for the Development of Educational Auditing, 1971. pp. 47-50.

Sampling

In most situations it is impractical to gather evaluation data on the entire group or to observe all behavior. Thus the evaluator will employ a sampling approach. It is of course imperative that the sample is representative of the behavior or class of behaviors which are being considered. The major types of probability sampling, often designated as random sampling, that are potentially useful in an educational setting, are described by Stenner and Webster in Educational Program Audit Handbook.

1. Simple Random Sampling. Simple random sampling requires a list of the entire population. Subjects are randomly chosen from that list in such a way that each subject has an equal chance of being selected.
2. Stratified Random Sampling. Stratified random sampling is often used as a device to increase the probability of representativeness of the population in the sample. It is similar to simple random sampling with the exception that subjects are placed into groups (strata) on the basis of some previously known information that is thought to be relevant to the questions under investigation. Within each stratum the sample is chosen in such a manner that each subject has an equal chance of being selected, although the number of subjects sampled from within each stratum may be different.
3. Cluster Sampling. Cluster sampling involves breaking the population of interest into groups and then randomly selecting the intact groups. The subjects within each group are not chosen independently, since, once a cluster is chosen, every member of that cluster is chosen. Therefore, while every cluster has an equal probability of being included in the sample, every subject does not. It is a common mistake in educational research to sample clusters (classrooms for example) and then to use individual subjects as the unit of analysis.

4. Systematic Sampling. Systematic sampling involves the specification of the total number of subjects that are desired in the sample, choosing a skip interval (k) that will provide that number of subjects from the population, and then randomly choosing a starting point and proceeding down the list, adding increments of "k" to each number from the starting point. This is a particularly advantageous method to use when sampling from student cumulative files or other long lists of entities.

References:

Miller, Delbert C. Handbook on Research Design and Social Measurement. New York: David McKay Company, Inc., 1964. pp. 48-50.

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Stenner, A. Jackson and Webster, William J. Educational Program Audit Handbook. Arlington, VA: The Institute for the Development of Educational Auditing, 1971.

Data Analysis and Interpretation

A variety of techniques have been devised for analyzing and interpreting evaluative data. It is often desirable to have an evaluation and/or research specialist including a computer analyst to be involved in data analysis and interpretation requiring detailed statistics treatment. The type of data available and the level of analysis will determine the degree of specialized assistance needed. Books and other references on data analysis abound and courses in statistical methods are common in most graduate curricula.

References:

Ferguson, George A. Statistical Analysis in Psychology and Education. 4th ed. New York: McGraw Hill Book Company, 1976.

Miller, Delbert C. Handbook of Research Design and Social Measurement. New York: David McKay Company, Inc., 1964. Part II.

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Learning Activity 6-a

Select at least two different kinds of program innovations which could be introduced into a vocational curricula and specify:

a. what the nature of design will be to evaluate its effect on student behavior (pre and posttest, baseline data, post only, etc.)

b. how the evaluation data will be collected (time lines, responsibility, etc.) and what type of instrumentation will be utilized

c. the nature of sampling which will be utilized (give sample size, evidence of representativeness, etc.)

d. how the evaluation data will be analyzed, interpreted, and reported.

Learning Activity 6-b

Select a vocational program of your choice and develop a simulated evaluation report including processes for assemblying, analyzing, and interpreting data and recommendations. Institutions implementing the VECS program would provide samples of their own.

PERFORMANCE OBJECTIVE 7 ●● ●●●●●

Develop a curriculum evaluation form, and use this form in critiquing two vocational program proposals and two vocational curriculum guides.

Content

The application of the elements of evaluation to review and critique programs provides the curriculum specialist with data to update and rewrite programs.

Curriculum and class narratives for vocational programs, i.e., Agriculture, Business, Distributive Education, Diversified Occupations, Trade and Industrial, and Home and Family Life (useful and gainful) will provide the opportunity to become familiar with the uniqueness of each program area.

Learning Activity 7-a

Utilizing the examples provided by the instructor, develop an outline and criteria form, evaluate two curriculum guides, and two program proposals.

References:

Orlich, Donald C. "An Evaluation Format for Educational Proposals," Department of Education. Pullman, WA: Washington State University. Unpublished.

Superintendent of Public Instruction. A Manual for Project Applicants and Grants. Title III, Elementary and Secondary Education Act in Washington State. Olympia, WA: Superintendent of Public Instruction, 1971.

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AN EVALUATION FORMAT FOR EDUCATIONAL PROPOSALS

| | Low Poor | | or | | High Good |
|---|---|---|---|---|---|
| 1. Needs for project are clearly stated and documented. | 1 | 2 | 3 | 4 | 5 |
| 2. Needs were developed by affected groups. | 1 | 2 | 3 | 4 | 5 |
| 3. Objectives are clearly stated. | 1 | 2 | 3 | 4 | 5 |
| 4. Objectives are related to identified needs. | 1 | 2 | 3 | 4 | 5 |
| 5. Objectives are measurable. | 1 | 2 | 3 | 4 | 5 |
| 6. Limitations of the project are stated. | 1 | 2 | 3 | 4 | 5 |
| 7. Important terms are defined. | 1 | 2 | 3 | 4 | 5 |
| 8. Procedures to conduct project are described fully. | 1 | 2 | 3 | 4 | 5 |
| 9. Procedural design is appropriate to accomplish objectives. | 1 | 2 | 3 | 4 | 5 |
| 10. Procedural design is free of specific weaknesses. | 1 | 2 | 3 | 4 | 5 |
| 11. Procedures are appropriately sequenced. | 1 | 2 | 3 | 4 | 5 |
| 12. Pupil population is described. | 1 | 2 | 3 | 4 | 5 |
| 13. Method of identifying pupil population is appropriate. | 1 | 2 | 3 | 4 | 5 |
| 14. Data gathering methods or procedures are described. | 1 | 2 | 3 | 4 | 5 |
| 15. Data gathering methods or procedures are established. | 1 | 2 | 3 | 4 | 5 |
| 16. Validity and reliability of the evidence are established. | 1 | 2 | 3 | 4 | 5 |
| 17. Appropriate methods are selected to analyze data. | 1 | 2 | 3 | 4 | 5 |
| 18. Evaluation design is clearly specified. | 1 | 2 | 3 | 4 | 5 |
| 19. Evaluation is oriented toward project objectives. | 1 | 2 | 3 | 4 | 5 |
| 20. Budget is adequate to conduct project. | 1 | 2 | 3 | 4 | 5 |
| 21. Budget is realistic. | 1 | 2 | 3 | 4 | 5 |
| 22. Project report is clearly written. | 1 | 2 | 3 | 4 | 5 |
| 23. Project report is logically organized. | 1 | 2 | 3 | 4 | 5 |
| 24. Tone of the project report displays an unbiased attitude. | 1 | 2 | 3 | 4 | 5 |
| 25. Project is easily transportable to other schools. | 1 | 2 | 3 | 4 | 5 |
| 26. Project is socially and educationally significant. | 1 | 2 | 3 | 4 | 5 |

Comments:

PERFORMANCE OBJECTIVE 8 ●●● ●●●●●

Conduct or assist in the development of a program or class evaluation in an actual school setting.

Learning Activity 8-a

The curriculum specialist, in cooperation with the instructor/advisor and local school personnel, will develop objectives and carry out an evaluation of a vocational program or part(s) of a program. Use the Internship/On-site Evaluation form on the following page to assist you.

# INTERNSHIP/ON-SITE EVALUATION

The task will be to develop a final report on an evaluation conducted by yourself in one of the following areas:

1. curriculum (co-relation with needs)
2. program (process evaluation
3. product evaluation
4. other

Format elements

1. Introduction
2. Site description
3. Statement of Purpose
4. Need for the evaluation
5. Methods used - tests, etc.
6. Presentation of the data collected
7. Findings, recommendations, and conclusions
8. Bibliography

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A K-12 Guide for Integrating Career Development into Local Curriculum. Department of Public Instruction, State of Wisconsin, Madison, WI, 1971.

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